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Address to Students

BY THE PRESIDENT, MR. J. ALFRED GOTCH, HON. M.A. (OXON), F.S.A.

[*Delivered at the General Meeting of the Royal Institute of British Architects, Monday, 2 February* 1925.]

IN the far-off days when I was an active member of the Architectural Association, I remember thinking and (I believe) saying that it was rather hard on young architects, and more particularly on those who were pupils or assistants, that they should have to work all day and then be obliged to devote their evenings to a different kind of work at the Association, while their friends in other callings were able to amuse themselves as they pleased. When I say they were "obliged" to do this, I do not mean that there was any compulsion about it, but that, outside the Royal Academy school, it was only in the classes and lectures of the Architectural Association, which were all held in the evening, that there was any opportunity of becoming acquainted with those sides of architecture which lie beyond the routine of office work.

But all this is now changed. The A.A. is no longer an institution carried on by voluntary effort, a place where young men met of an evening to teach themselves under the guidance of their fellows of somewhat greater age and wider experience. It is now a well-established, well-staffed, and well-equipped architectural school, affording a course of training spread over several years. Nor is it the only institution of its kind, as was the case in the old days. Forty years ago, it was, save for the Academy school, the only educational body of any account in the whole country, so far as architecture was concerned; and any lad seeking to be an architect had, almost perforce, to come to London for a time, if he aimed at anything higher than the prospect of carrying on a provincial practice within the old limitations—limitations which included good, sound work, but gave little opportunity for the pursuit of fine architecture.

From this point of view, again, there is a great change. Architectural schools, under the eventual control of the Institute, have been established in many of our large towns—Liverpool, Manchester, Leeds, Glasgow, Cardiff, and others. Some of the modern Universities, and Cambridge of the old, have started schools of architecture. The opportunities, therefore, of acquiring a sound training in the

innumerable subjects with which an architect has now to be familiar, are within the reach of nearly everyone. The path of the student is plain and open, cleared of obstacles. At every awkward corner is a guide, at every difficult climb a handrail. I have not myself had the chance of taking advantage of such assistance, but I cannot help thinking that, when the way is made so easy, half the fun of following it must be gone.

Essential as this imparted training is now considered, it must not be forgotten that the prominent architects of our own time, and still more those of the time just past, had little or none of it. They were, to a great extent, self-taught. Whether their work would have been better had they been taught by others, is a barren speculation. The old A.A. has given our profession some of its best known members. If you look back to its old records for the names of its most active members, its Presidents, you will find that hardly one of them has sunk into insignificance, and still less into oblivion—at any rate for the present, whatever of forgetfulness the future may hold.

I think we shall have to beware lest unstinted help lead to a lessening of strenuousness. I am told—and the phenomenon was illustrated in the A.A. play recently presented within these walls—that, although the drawing-boards are crowded during the first three years of the student's course, they are sparsely occupied during the fourth year and are almost empty during the fifth. Does this, by any chance, mean that when help and guidance are abundant, full advantage is taken of them, but that when the student is thrown more completely on his own resources, he shrinks from the ordeal? If so, ambition should be made of sterner stuff. Great work can only be achieved by hard work, for through that medium alone can talent show itself. Few are the young geniuses, facile in acquiring and expressing ideas, who make their corresponding mark in after life. Brains can achieve but little without work. It is the plodders, the hard workers, who carry on the world. If any man of middle age will look back upon the circle of his youthful friends, how many of the brilliant leaders of those distant days does he find in the forefront now?

Far be it from me to offer advice to my juniors. I hope I am modern enough to avoid making that mistake; for at no period of recorded time, not even when Solomon was fresh on the throne, were the young more willing to guide the world, to direct the failing footsteps of their fathers, or to point their grandsires to regions of kindly rest and oblivion.

But if I modestly shrink from giving advice, I may perhaps venture to bring to your remembrance a few things, old and new, from which you can draw your own conclusions. Among the old things worth recalling are the views on the great topic of Work which have been held from time immemorial, and have found expression in the literature of all ages. In our own tongue are records reaching back to the dawn of history, and throughout those records will be found allusions to labour which take for granted that hard work is the natural lot of man. The burden of these utterances is that, outside of Paradise, man must gain his living by the sweat of his brow; that he is born to labour as the sparks fly upwards; that if any will not work, neither shall he eat—a wholesome doctrine, now often heard with impatience.

The same ideas pervaded the Middle Ages and were embodied in the well-known aphorism, *Laborare est orare*. Nor did they die out at the Renaissance, that age of joyous delight in life, and of revolt against the crabbed philosophy of past centuries. The suave Raphael, the mighty Michael Angelo, the turbulent Cellini, all lived in an intermittent fury of hard work. Our own Shakespeare recognised its inestimable worth when he said "The labour we delight in physics pain," and—coming at a stride down to recent times—Stevenson concludes his essay on *El Dorado* with the words "To travel hopefully is better than to arrive, and the true success is to labour."

Thus far the past: but in modern days a different view seems to prevail in certain quarters. There seems to be a widespread inclination to curtail work and working hours, to limit output, to take full advantage of unearned doles, which theoretically are provided for the zealous, hard-working man, temporarily deprived of work but eager to resume it: all of which would appear to indicate the existence of a certain aversion to doing work if it can be avoided.

Even in the pursuit of pleasure—that inalienable right, accruing to us through the accident of having been born—we seem loth to indulge in undue exertion. We sit at ease to witness spectacles of exertion by other people; we are content to watch

great football matches instead of playing in little ones. Our very dancing entails a minimum of exertion ; well might the orchestras of to-day exclaim with them of old, " We have piped unto you, and ye have not danced "—" ye have but walked." Sir Christopher Hatton danced his way into Queen Elizabeth's favour ; he did not stroll thither.

In following our own vocation—of which, more than any other, it may be said that its ideals can only be expressed through work, and its particular advantages can only be obtained through work—in our own vocation we are inclined to content ourselves with pressing the button of photography instead of wielding the pencil of the sketcher. The button has its excellent uses, it is true, but for the student the pencil is the nobler instrument, more intimate in its teaching, more useful in its exercise.

It would seem, indeed, that when we come to some Hill Difficulty, which Bunyan's pilgrim mounted with so much toil, we are apt to feel aggrieved if it is not provided with a funicular. But the real truth is that hard work is one of the greatest blessings that can be bestowed. It is an anodyne to grief, a tonic to the mind, a sedative to the soul. What is so irksome as idleness ? What is more tedious than want of occupation ? The exercise of one's faculties is itself a pleasure, even if the result has no far-reaching effect.

The very deficiency of strenuousness in the mass gives greater scope to the individual : the hard worker has fewer competitors. Without undue perturbation he can work out his problem of construction, his problems of design ; from one inadequate effort to another he can climb to his final solution. He can wring its secrets from the past, through long summer days amid the soaring pillars of some ancient church, or beneath the mazy ceilings of Elizabeth, or from the graver adornment of the Georges. No trouble will be too great, no day too long, no means of sustenance too negligible. He will learn to know his own country and its splendid inheritance of architecture. He will learn to love its fields, its woods, its streams, its hills—aye, and its mountains, too, in the pursuit of his work. In its parks and its ancient gardens he will catch a glimpse of bygone grandeur ; within the walls which they surround he will find storehouses of the finest products of arts other than his own. Thus will he widen his outlook on life, on history and on art, and if he follow his bent to the full he will be eligible for inclusion in that small and select company who can with truth aver that they have slept in every county in England, and not only slept, I hope, but been wide awake as well.

Youth will have its day, and will still long, now as of yore,

> To sport with Amaryllis in the shade
> Or with the tangles of Neæra's hair,

even if Amaryllis herself sits at a drawing board, and the tangles of Neæra's hair hide her bowed head as she taps the typewriter. But let us not forget, after all, that now, as of yore, Fame (that last infirmity of noble mind) will still insist as a condition of our winning her, that we must

> Scorn delights, and live laborious days.

Well, my tirade is done ; and this, at any rate, can be said, that if symptoms of a decline in strenuousness may sometimes suggest themselves, even in architectural students, there is not much to carp at in the amount of work submitted for the prizes that bring us here to-night. More particularly is this true of the Tite prize, which has evoked the finest competition of recent years. Neither duty nor inclination prompt me to attempt criticism of the work of the year ; that responsibility is placed in the able hands of Mr. Maurice Webb.

But there is one matter upon which, in conclusion, I must touch, and which I am sure will be of interest. The very handsome prizes which, chiefly through the beneficence of individuals, the Institute is enabled to offer to students, are now to be co-ordinated in an intelligible manner, and they are to be arranged in a kind of ladder, of which the topmost rung will be the Rome Scholarship in Architecture. More than this : it is felt that Maintenance Scholarships are sorely needed in order that youths of narrow means, who have a call towards architecture, may be helped in their start on the arduous path. A considerable amount of money is now practically dissipated in small prizes throughout the country, prizes which do not always attract competitors. It is proposed to approach the donors to see if it may be possible to pool the funds with a view to founding Maintenance Scholarships with them. But whether this prove practicable or not, a first step has been taken in the desired direction, for the Society of Architects have allocated part of their funds to one Maintenance Scholarship and the Institute part of theirs to another. On this agreeable outlook I will conclude.

Review of the Work Submitted for the Prizes and Studentships, 1925

BY MAURICE E. WEBB, D.S.O. [*F.*].

[*Read before the Royal Institute of British Architects on Monday, 2 February* 1925.]

MR. PRESIDENT, LADIES AND GENTLEMEN,—I have the honour to speak to-night as a critic, an official critic appointed by you, Sir, with the express function of criticising the judgment of our own juries and in many cases the work of our own members. It is an anomalous position which, unless the utmost goodwill is exercised on both sides, may some day land a President and the juries in an untenable position! But this year, owing to the splendid competition for our prizes, I am the person who has been landed in the untenable position; like the King in *Princess Ida*,

"I find my life extremely flat
With nothing whatever to grumble at."

What, therefore, am I to do? It has been well said of a critic, "If you dissemble sometimes your knowledge of that you are thought to know, you shall be thought another time to know that you know not." I propose, therefore, to give first some solid facts about which I *do* know and then some thoughts upon the designs and drawings hanging upon these walls, in the hope that they may, as honest criticism, be of use to the schools and their students. These drawings are the work of students who have either been trained in Schools of Architecture or in architects' offices as pupils. If you can judge the value of training by success in prize competitions, the results this year are conclusive.

The Architectural Association is conspicuously successful in being represented by the winners of the Tite, the Grissell, the Alfred Bossom and the Godwin Bursary—a great record. The Essay has gone to Cambridge and the Owen Jones to London University. May I express a hope that architects will investigate very carefully the merits of the nearest School of Architecture before taking a boy or a girl into their offices as a whole-time pupil?

The President has referred briefly to the general revision which is in prospect of our Institute prizes and scholarships. He has left it to me to fill in some details of what is, I believe, the beginning of a big constructive effort to enable young men who show any real talent for architecture to pursue their ambition in the best atmosphere and under the most favourable conditions.

The proposals now under consideration, and I am glad to say approved by the R.I.B.A. Council and by the Recognised Schools, take two forms.

The first, and perhaps the most important, is the introduction, if the necessary funds can be found, of a series of Maintenance Scholarships of the maximum value of £100 a year. These scholarships are to be awarded to men who show a talent for architecture but are without the means to fit themselves for its practice by the training which the modern architect requires.

The Board of Architectural Education hope to found ten of these scholarships in different parts of the country, and have asked the schools to co-operate by remitting or reducing their fees to such scholars. New South Wales has founded two, tenable in England, and we hope that the other Dominions will be inspired by this excellent example to follow suit. These will be additional to the ten English scholarships.

The next constructive point we are working on is our prizes. A comprehensive proposal has now been put forward by a conference, representative of all the bodies interested, for dealing with the whole question of prizes, many of which were founded before the present system of education had developed. It is intended in future to bring all the prizes for design into line with the Prix de Rome and to arrange them to lead up to this prize.

Largely through the help of the Council of the Society of Architects, it will in future be possible for the Institute to award a great prize for design every year. Since the war, owing to the depreciation of money values, the Soane has been awarded biennially (this being the alternate year when it is not awarded).

In future, if the decision of the Council of the Society is ratified by the members, it will be coupled with their Victory Scholarship, and one or the other will be awarded every year and rank equally in prestige and value.

The Victory Scholarship not only commemorates the result of the greatest war in our history, but will also commemorate for us the happy domestic peace which has descended upon our profession as a result of the amalgamation of the R.I.B.A. and the Society of Architects.

Following upon this alteration in the Soane, the Tite will become in future a more junior prize and also be awarded annually, forming the bottom rung of the ladder to which the President has referred. In future minimum standards of education will be set up for entry to these prizes instead of maximum age limits. The *en loge* system will be introduced, and generally the conditions of setting and judging them which are

used for the Prix de Rome will be followed by the R.I.B.A. It is hoped by this co-ordination that the confidence of the students in all our schools will be fully restored and the result seen in an even keener competition than we have this year for the blue ribands of the student's career.

It ought to be recognised by all schools and by all students that the winner of these R.I.B.A. prizes, the Soane, the Tite, the Pugin, the Measured Drawings, the Essay, and we hope in future the Victory, will establish for himself a reputation at the beginning of his career which will be invaluable to him. If he can climb to the top rung and reach the Prix de Rome or the Jarvis, so much the better.

The alterations proposed in the prizes, other than those for design, I will deal with in connection with the detail criticisms as I come to them.

The first prize to take in detail to-night is the Tite Prize.

Twenty-six sets of drawings were submitted for this, the principal prize for design given this year. The subject was a small museum upon a small promontory close to the ruins of a small Temple of Vesta and on the site of ancient excavations. The museum was intended to house the more valuable discoveries.

Taken as a whole, the standard of these designs is probably higher than in any year since the war, and the jury was particularly glad to note that the methods of presenting them are in most cases quieter and simpler than of late. The colouring is less bizarre and the buildings are shown without a too exuberant use of scenic effects. There was one very noticeable thing which appeared in nearly every design except the winning one, and that was a failure to grasp fully the true intent of the programme. I was especially asked by the jury to impress upon students the importance of studying very carefully the programme before beginning a design. In this case the programme clearly intended the museum to be a small one and not to conflict either in character or size with the Temple of Vesta. In some of the designs it is difficult to discover the temple at all, in most the museum completely dwarfs it, in others the style adopted is such as to compete instead of harmonise with that of the Temple.

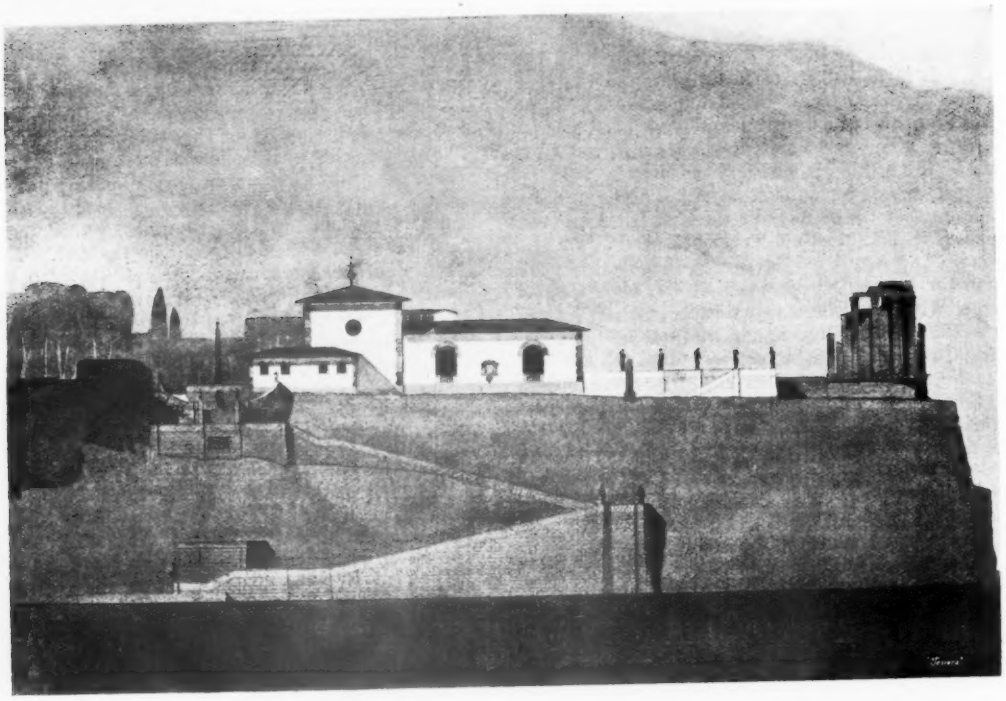
For the benefit of those who have not had an opportunity of studying these drawings, I have had some slides made, which, with your permission, I will now show. These will, I hope, make my meaning clearer.

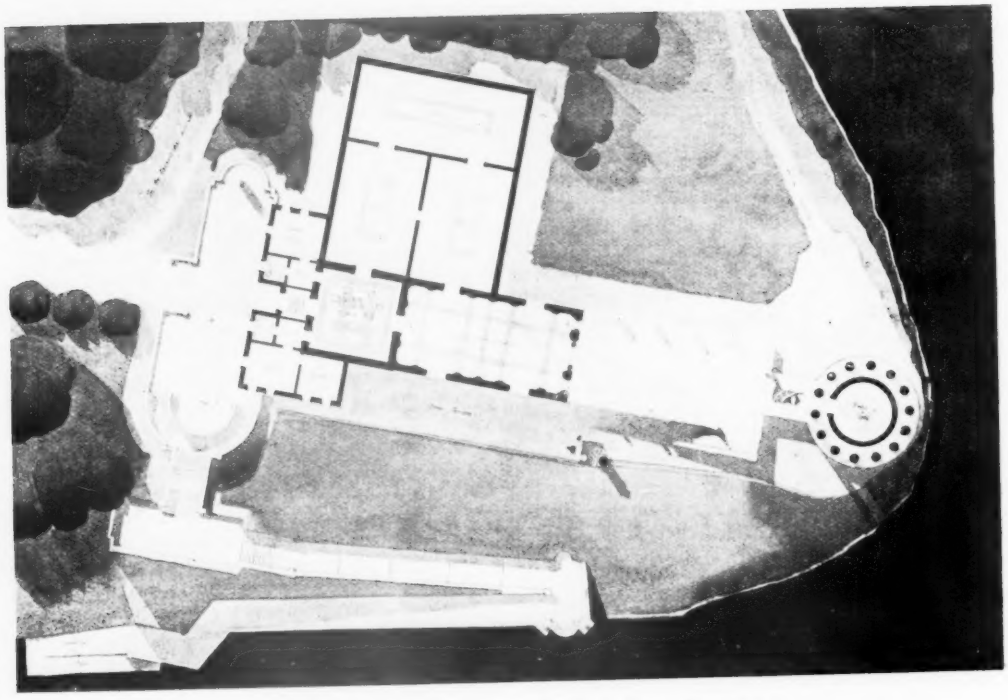
Here is the plan of the winning design. It is very simple, but reveals imagination and thought—in the opinion of the jury by far the most successful solution of the programme. The museum is placed between the Temple and the main approach from the ruins, so that a visitor on entering the building would see the Temple as the culminating point of a vista, upon the side walls of which would be arranged the smaller archæological fragments. The side galleries are more or less concealed by a squat tower on the axial line, and the secondary approach from the water is well arranged. The whole scheme is an excellent example of a plan which uses the principles of axial planning only to the extent of emphasising the main purpose of the building, and with that achieved the author has been content to let a natural arrangement of layout do the rest. The elevation contains the same qualities as the plan, and by its sensitive restraint does reverence to the Temple. The draughtsmanship does not reach the same standard as the design.

This design won the prize because its author brought into play the one vital quality of imagination which is necessary to any work of art, and coupled with it a proper sense of proportion and common sense—added necessities in the case of the art of architecture. On behalf of the jury, may I congratulate Mr. Beaty-Pownall on a very charming essay in design. Certificates of Honourable Mention were awarded to "Key," by Mr. Scarborough, and "Chianti," by Miss Alison Sleigh, both distinguished for good draughtsmanship.

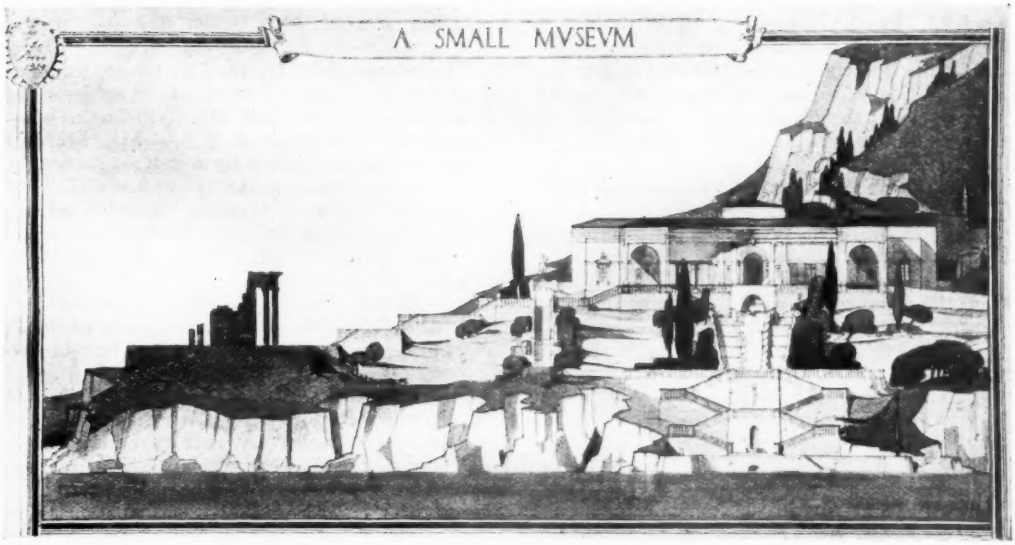
"Key's" plan was spoilt by a too pretentious approach to the museum from the Temple, but his scheme of placing the Temple some distance away from the museum, and below it on a little eminence of its own, is an interesting though not quite successful attempt to avoid the dwarfing effect I have previously described. The elevation is good if not exciting, and shows a knowledge of Italian architecture. "Chianti" attempted a too ambitious plan and too much originality of a rather doubtful kind in the elevation. The Tite is meant, I would remind the author, for the study of Italian design. Some of the details used, such as the cornices, would require a great deal of imagination to bring them into this category. Of the draughtsmanship I have little but praise, except for a suggestion that in future the author should be careful to avoid by over-elaboration a certain confusion which is very evident in the elevation.

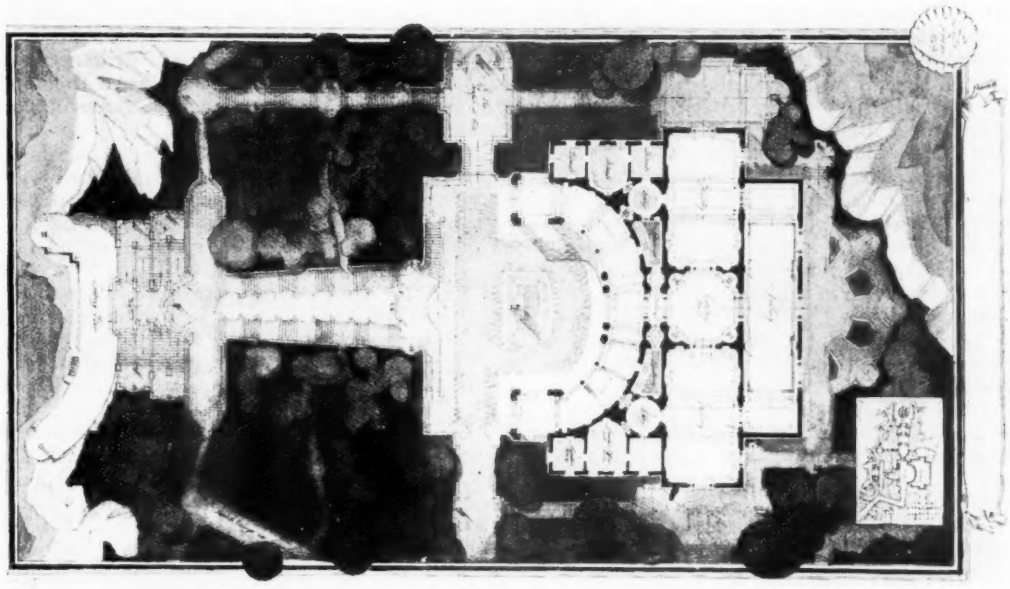
Of the other designs sent in there are two sets of twins startlingly alike. If either set of twins had been in the running for the prize it would have required the judgment of a Solomon to part them. Fortunately, Solomon's wisdom was not required. It may not, in this connection, be out of place to remind competitors that these prizes given by the Institute are awarded for individual talent, and any suggestion of co-operation is easily seen by the jury and discounted. In the future competitors will be well advised to avoid the co-partnership idea. This is, no doubt, one of the dangers of the school system, for at any exhibition of student drawings to-day it is possible to walk round the room and pick out the drawings that come from par-





DESIGN FOR A SMALL MUSEUM. BY D. H. BEATY-POWNALL
(Awarded the Tite Prize)





DESIGN FOR A SMALL MUSEUM. BY MISS ALISON SLEIGH
(Awarded Tite Certificate of Honourable Mention)

ticular schools by the manner of their design or draughtsmanship. It is well for students to realise that the mannerisms of a school count for little or nothing with juries, whose sole object is to try to find the man who has the finest sense of architecture and to get behind the method of presentation to the real thing underneath.

In future the Tite will be set and judged on similar lines to the Prix de Rome and the preliminary stages done *en loge*, with the result, we all hope, of eliminating to a large extent the dangers I have been speaking about. Before passing on to the Pugin I should like to mention the following designs as coming next in order of merit: "Snowy," "Sand," "Plot," "Penates," "Frog," and "Ave atque Vale." Of some of these I have slides chosen to illustrate particular points.

The front elevation by "Snowy" is drawn in monotone; it is a good, straightforward piece of Italian design, and is, in my opinion, one of the best drawings in the room. I could wish the plan was finished in the same way instead of tinted with a laborious criss-cross pencil pattern. However, this design must have run "Chianti" very close for a mention, and it reached a high level in plan and elevation. "Penates'" is another good design, well shown in a charmingly coloured set of drawings.

The next slide I have shows the elevation of the design by "Porphyry," and it is chosen for some rather remarkable pen-and-ink draughtsmanship, not for its design, which is thin in detail and a long way below the standard of some of the other competitors; but I hope the author of it will try again when he has had more experience of design and that his talent for pen-and-ink drawing will continue to develop. The next slide shows the design under motto "Vela Rossa," which was not commended by the jury, except for its draughtsmanship. It was considered, and I think rightly, that the museum was set too close to the Temple, and the whole group of stepped loggias and Temple has a rather crowded and uncomfortable look. The elevation is, however, shown in a fine colour drawing.

My last slide shows "Ilium Fuit's" design, or rather a half-inch detail of it, and I have chosen this because, if a little laborious, it is an earnest attempt to show his design in a really complete way. The treatment is actually a little too elaborate for a small museum on such a site, and the design generally suffers from an attempt to make the building too important, but it is obvious that this student has spared no pains and given of his best.

Time does not permit of mention of more designs, but for interest and a high level of work this year's Tite prize comes high in the history of the competition.

The Pugin.—Four sets of drawings were submitted for the Pugin, but only two were really up to Pugin standard. The unsuccessful competitors showed considerable promise, especially Mr. Micklethwaite, and it is hoped that he will not be discouraged from competing again.

The winner, Mr. D. H. McMorran, undoubtedly deserved his success. His choice of subjects and his sketches are better than Mr. Williams's, who was awarded a mention and £10. Mr. McMorran's measured work suffers from a certain mannerism of pencil shading, which looks well at first sight but with continued repetitions becomes tiresome, while Mr. Williams goes to the opposite extreme and makes his drawings too mechanical. He has devoted too many of his drawings to one particular subject for such a prize. Of both, however, I think it may be said that their work, if not equal to that of some of the Pugin winners of the past, is equal to the best of average years.

The Grissell Gold Medal.—Only one set of drawings was submitted for the Grissell, but it is an exceptionally good set and equal to any that have been sent in for many years. The Grissell, as you know, is intended for constructional design, and I have noticed when visiting the schools of architecture that constructional subjects often result in excellent designs. This should, of course, be the case, and students should remember that thought and study of constructional problems is of great value in after life and is never time wasted. The subject for the Grissell this year was a dance hall, and Mr. Cameron has produced a design which looks like a dance hall. The touch of modernity which he has introduced is entirely suitable in such a building. The jury have in this case given me a written criticism, and I cannot do better than read it and congratulate the author, Mr. Cameron, on a very successful piece of work:

"The general arrangement, draughtsmanship and treatment are excellent, and we consider the project of a high standard and eminently worthy of the award. Criticism in detail should include the following:

"1. The arrangement of steel-work at junction of truss and stanchion is weak.

"2. The truss bearings are weak. The buckling length is only reduced in one direction and not in the other.

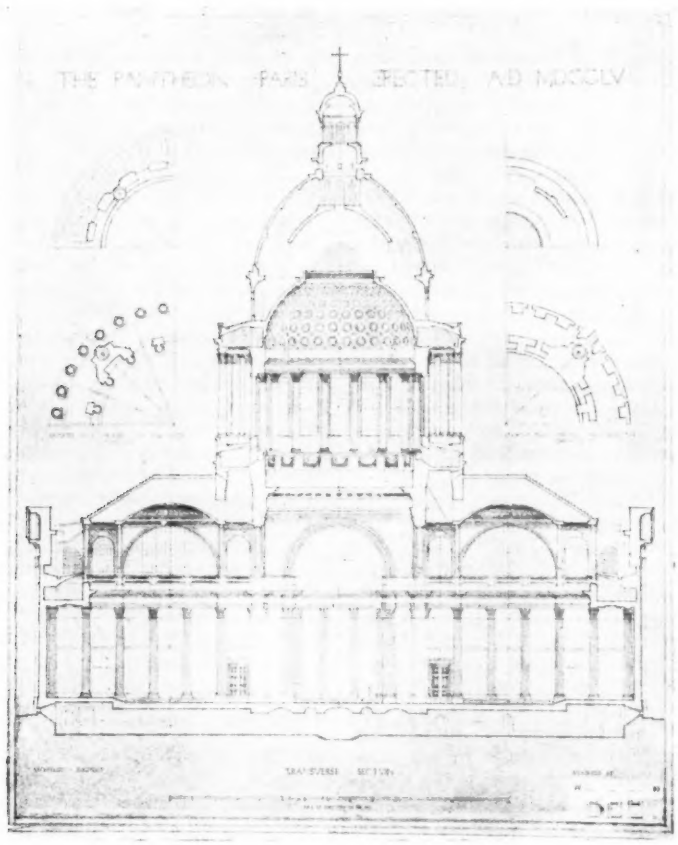
"3. The calculation of stresses in stanchions is careful, but ignores stresses due to deflection of truss and racking of building.

The Owen Jones.—Four sets of drawings were submitted, and the prize was awarded to Miss L. Payne for a fine series of colour decorations of tiling, Turkish and Spanish pottery, embroidery, heraldry and stained glass applicable to architectural design. I seem to trace in Miss Payne's work the influence of Professor Richardson's new course of colour decoration at London University. To secure a winner of the Owen Jones so soon augurs well for the future of the course. For some reason which the jury did not understand

Miss Payne submitted in addition to a well chosen series of drawings a design for a large building, which appeared to be quite irrelevant, and they wish to make it clear that this design was not taken into account in giving their award.

The other competitors ran Miss Payne close, but their subjects were not so suitably chosen, nor was their tural design, in which the treatment of colour is the paramount issue.

The Measured Drawings Prize.—Five sets of drawings were submitted, and the prize was awarded to Mr. Richard W. Briggs for a good set of drawings of the Panthéon in Paris. You will see from the slide that these are good clean, straightforward pencil drawings, rather mechani-



THE PANTHÉON, PARIS. BY RICHARD W. BRIGGS
(Awarded the Measured Drawings Medal)

colour sense so true. One sheet of wall tiling by Mr. Hollinshead and the Southern Italian carved woodwork by Mr. Dinkel made striking drawings.

In future years this prize is to be definitely brought into more intimate contact with architectural design by selecting, in the first instance, the best three or four sets of drawings of coloured decoration and then giving to the selected competitors a subject for an architec- cal perhaps, but they thoroughly illustrate the subject. A mention was given to Mr. J. A. Coia for his set of drawings of the " Salute " in Venice—one of the most picturesque buildings in Europe when seen in reality, but I rather doubt the value of measuring the whole of it in detail. An elevation of such a curiously planned building as this cannot possibly convey the real appearance of it. The jury consider, and I agree, that the

winner is the best draughtsman, and his surveys are more complete. The drawings of the " Salute " are rather too slick, and the surveys do not appear to be nearly so full. In addition to these two sets, there is a good set of drawings of Wren's work in the Fountain Court and the Garden Front of Hampton Court, some beautiful pencil drawings of Baalbec, and a poor one of the FitzWilliam Museum at Cambridge. The author of this set would do well to try his hand at some less ambitious subject.

This Measured Drawings Prize has tended to become a sort of *tour de force* ; enormous buildings are measured in minute detail and the drawings completed to the last brick. Everyone must admire the thoroughness with which they are made, and as complete records they are often very valuable, but it is a question whether it is not being overdone in the case of students who might be spending their time better by more varied work. It is proposed, therefore, in future to bring the Measured Drawings Prize into line with the Pugin (without the limitation confining it to mediæval work), and to encourage the sending in of students' work done over a period of years, including sketches as well as measured drawings. It is felt that this will best fulfil the purpose of the prize and be an encouragement to the schools to include plenty of measuring in the school courses. Some day, perhaps, it may be found possible to found a bursary for the encouragement of measured drawings of large buildings for men of more mature age.

The Alfred Bossom Prize.—Three sets of designs were submitted for this prize, which was awarded to Mr. F. E. Bennett, under the motto " Taxi." This is the first competition for it. It is an interesting prize given for competition among Associates by Mr. Alfred Bossom, an American architect. Its main purpose is to encourage architects to study not only the design and plan of their buildings, but also such questions as site values, rentals, etc. Competitors must choose a site in a town selected by themselves, and submit such particulars of their scheme to the jury as they would have to submit to a commercial firm who contemplated building, in order to prove that the speculation would be likely to be successful. How far such a prize is likely to lead to the advancement of good architecture I, for one, am very doubtful ; but this year my doubts are needless fears, for it has resulted in an admirable design for a large block of business premises on an island site in, I believe, the city of Manchester.

Mr. Bennett has evidently studied the requirements of a big store of this kind. His plan appears to fill the bill, and his elevations would do credit to any street. He has tackled boldly the shop front problem, and by the arrangement of his entrances at the ends of the building, at the base of a species of tower, he has largely got over the risk of giving his building the appearance, so common to many of our shops, of being balanced unsteadily on a continuous sheet of plate glass. These towers also relieve the monotony of the upper parts of the elevation. The jury had the assistance of business men who satisfied themselves that Mr. Bennett's financial calculations were correct, so of these I will not presume to speak. The other two designs submitted were not in any way to be compared with the winner's either in design or, I understand, finance.

The Essay Prize.—Five essays were submitted and the prize awarded to Mr. F. Pentland Chambers, with a certificate of mention to Mr. Martin S. Briggs, under the motto " Let us now praise famous men and our fathers that begat us."

The title of the winner's essay is " The Æsthetics of the Ancients." It shows considerable thought and research, and the author would probably be the first to admit that his essay would not have been written had he not had access to the works of Mr. Lethaby. His chief contention is very contentious, that the " purely artistic values " were wholly unknown to the ancients. It contains some original thought and considerable ability in marshalling the arguments. Of its literary merit I am not quite so convinced as some members of the jury. The author is too fond of long, tongue-twisting words. These may be necessary to his subject, but to the average reader they would seem to be more suitable as a test for drunkenness in a police court than as embellishments of an essay. Some of these are "eschatological," "objectification," "æstheticician." Further, such involved sentences as the following do not render his meaning less obscure : " The irony of the whole modern position is demonstrable in that what arts we still have . . . must be estimated by values which, as in their part, their creators have no consciousness of." The great essayists of the past did not impose these trials upon their readers, and I hope before publication some revisions will be undertaken.

The second best essay, on "The Architect in History" is to my mind a most interesting, though perhaps not so stimulating a piece of work as the first. It is a solid, serious effort and complies with the condition which requires competititors " to make a useful contribution towards knowledge." It deals with a subject which is much in our minds nowadays, especially those portions of it which deal with training, and I hope the author will secure its publication, perhaps in a condensed form. I confess to some sympathy with the author of this essay in that he did not catch the jury's eye.

The third best essay is that one dealing with the " Architects who succeeded Christopher Wren and were engaged in building the fifty new churches in the London District." This also is an appropriate subject

at the present time, when the Church itself wants to pull them down again and is making determined efforts to achieve its object. This essay is illustrated with pen-and-ink sketches, which would have been more helpful if they had been more numerous and more carefully drawn. Many of the churches are not illustrated at all.

The other two essays are involved and confused and do not merit serious comment.

The Arthur Cates Prize.—No competitors entered for this prize, and the fact that no competitors have done so now for ten years is a justification of the Council's proposal to seek an alteration in the conditions which govern it. It will, we hope, if permission is obtained, be available for a more useful purpose than at present. I can truthfully say that this last prize has been the easiest to criticise of all, and I must thank you for listening so patiently to my dull remarks about the others. May I add just one word to those students who are leaving the schools where their time has been largely spent in " esquisses " and ideal projects, on history and drawing from the life, and all the jolly, fascinating subjects of which the study of architecture is full, and beg them to remember that they are in the transitory stage between the ideal and the real, that there is much else the successful architect has to learn before he can fly safely. At first this other side may seem irksome, but it must, afterschooldays are over, be mastered first in practical work in an office and later in practice for themselves.

A student's paper with which I was once connected put this side of our troubles fairly concisely some years ago, when your critic was in this chrysalis stage, in a little rhyme which it may not be inappropriate to conclude with to-night :

" I dreamt last night such a beautiful dream
Of a sphere where Beauty reigns,
Where Art rules artlessly all supreme
And nobody's heard of drains—
Where the Sisterly Muses must need elect
To work in affinity,
The Painter, the Sculptor, the Architect,
A peerless trinity.

. . . . . .

But
I awoke with a start to a letter long
Beginning
" Dear Sir,
May we
Draw your attention to something wrong
In your Drawing 53 ?

. . . . . .

" The bathroom is far too small for the bath,
Though it might go in with a shove ;
At present it's out on the garden path,
And the Clerk of the Work's in love.
The wet has come in through the study wall
And the paint has begun to run,
The ceiling has cracked in the entrance hall,
Yours faithfully,
Jones and Son."

Those are the sort of little troubles which are or may be a daily irritation unless you realise that there is a practical side to our Art, which sooner or later must be taken into consideration.

Votes of Thanks to the President and to Mr. Maurice E. Webb

Mr. J. C. SQUIRE (President of the Architecture Club) : The paper we have just listened to, and your address, Sir, have been addressed specifically to young architects, and I am not quite young, and I am not quite an architect. On the other hand, I do recall, to my comfort, the remark which you quoted at an earlier stage of the evening : " If a man will not work, neither shall he eat." You, Sir, entertained me at dinner before we came here, and I feel, after that, that I can do no less than fulfil the function.

I was struck, in the course of your remarks, by one thing in particular. You were surveying the way in which the field of architecture had been developing of recent years, the way organization had spread, the way architects had got together and begun to co-operate more than in the past, the way the whole profession was solidifying, and, in particular, the way in which architectural education was organised. You said that although that was all, no doubt, a very good thing, you could not help feeling, for yourself—you who had never had so many hand-rails—that a certain amount of fun had disappeared. In a manner I sympathise with that feeling ; but, on the whole—speaking as a member of the lay public in the middle of a professional audience—I should say it was just as well we should have a little less of the fun. You will remember the old fable which used to be in our school books when I was younger, about frogs who were being pelted with stones by the boys, and who croaked very loudly in protest. And they were told it was only in fun. They retorted : " It may be fun to you, but it is death to us." In the same way, architects were having any amount of fun in the nineteenth century, and the public, who are being pelted by their stones, have very considerable ground for complaint. Architecture must be, in large degree, perhaps above all other arts, traditional, communal ; and teaching and co-operation have

to be important elements if architecture is to flourish. You cannot afford the degree of eccentricity in the pursuit of architecture which we are compelled to see, and which most of us do not always welcome, in the other arts. In so far as all this organisation is helping to develop a more continuous, an evener, a more agreed tradition amongst our architects, it seems to me that there is everything to be said for it, and nothing to be said against it.

I do not know whether, when I was called upon to propose a vote of thanks to you, I was also meant to say a word about Mr. Webb, or whether there is a separate motion on the subject for Mr. Webb. But I cannot sit down without saying that I enjoyed Mr. Webb's explanation of these drawings most thoroughly, and I am sure everybody else did too. One or two incidental points in his remarks struck me. I could not help being a little intrigued by the quotation he read from the essay. I rather gathered, though he did not say so explicitly, that there had been something of a fight on the jury, consisting, I suppose, entirely of architects discussing architecture, when they were debating literary style. In this matter, of course, architects are laymen. I suspect that man could write rather good English. The sentence quoted was one against which you could urge a certain number of points, but the faults were those of a man wrapped up in his subject and eager. It is the fault of youth, which is enthusiastic and tumbles its English about. I should have liked the best sentence to have been quoted, as well as the worst.

Mr. WEBB: I want to be fair to the author. The jury were unanimous that his essay was the best, and the opinion I expressed to-night was only my own. There was no fight on the jury; they expressed their opinion in writing separately that his essay was the best, and it is due to him that that should be said.

Mr. SQUIRE: I did not mean my remark to be taken in that way. If there was not a fight, I am extraordinarily surprised. I have never heard a body of men discussing architecture without almost coming to blows.

There was one thing that shocked me, and that was, I understand a gentleman, a student, produced an enormous plan for dealing with a site in London, and his financial calculations were deemed sound by a business man. That precocity seems to me almost dreadful.

Dr. ALBERT C. SEWARD (Vice-Chancellor of Cambridge University): Mr. Squire, who has just proposed the vote of thanks, told us that he did not feel himself well fitted for the task. I am much less qualified than he is. He, I notice, is President of the Architecture Club; I am not even a member of any architecture club. I was particularly pleased to hear what you said, Sir, about schools of architecture, and especially your reference to our comparatively new school at Cambridge; it was a great satisfaction to me to find that this year, for the first time—there has not been very much time before—one of our students gained a prize, the Essay Prize.

I cannot say I know very much about the Cambridge School of Architecture, but I have always, from the foundation of the school, taken a very great interest in it. Architecture is not my subject, but there is no subject in which I have for so many years felt such an interest outside my own particular line of work. I, personally, am very keen indeed that our school should prosper and become a very flourishing part of the University, and I believe it will do so.

I was very glad, Sir, to hear what you said in your address about the advantage—perhaps I should say the disadvantage—of students receiving over-much help. I have often felt, and perhaps this is a natural tendency on the part of those of us who are growing old, that in recent years there has been a great deal too much spoon-feeding—if I may use the expression—at all events at Cambridge. Perhaps I ought not to say this in public; but there has been a tendency and I am sure it is a bad one, to help people too readily, instead of giving them the opportunity, or making it necessary, to use their own imagination and determination to the fullest extent.

I should like very cordially to second this vote of thanks.

The PRESIDENT: I thank you for the kind way in which you have listened to my remarks.

There is not a great deal I need dwell upon in the remarks of the proposer and seconder; but I should like to say that the proposer rather misunderstood the use that I made of the word "fun." My idea was not to make fun of things at all. Perhaps I ought to have said "interest." I am certain of this: that anyone who has the real spirit of the mountaineer in him, would rather climb the rocks himself than have a hand-rail to help him up. Therefore I think he gets more fun if he does not get too much help.

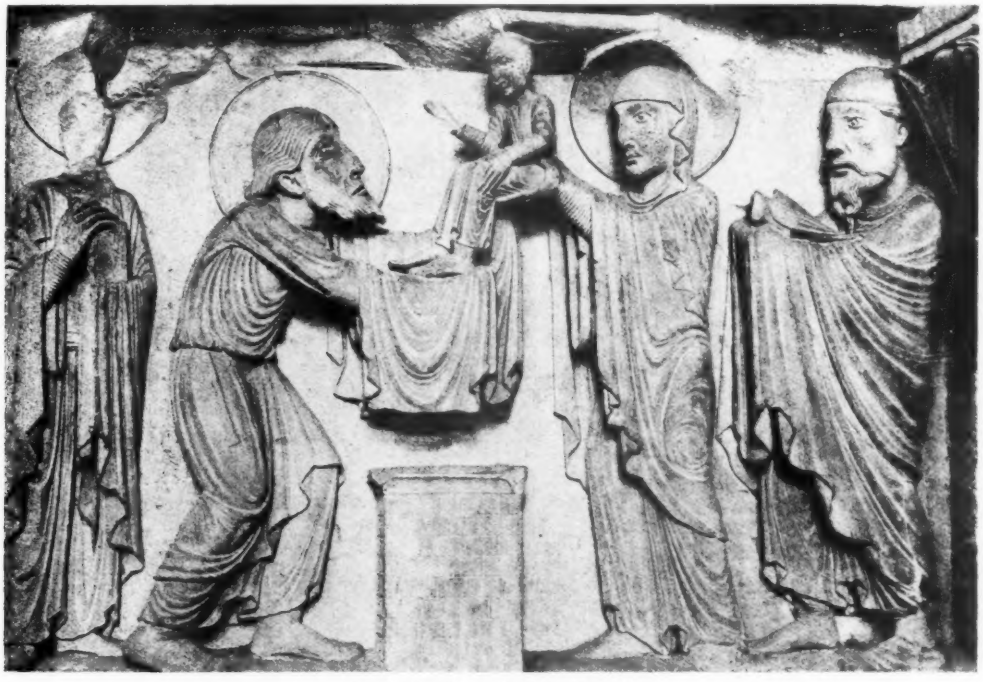
I should like to propose a vote of thanks to Mr. Maurice Webb for the very able way in which he has criticised the prize work of this year. It is not an easy task to criticise work of this kind. If you have to speak the truth, you are liable, sometimes, to wound feelings, and I think Mr. Webb has succeeded very admirably in avoiding Charybdis on the one hand, and Scylla on the other, and I have the greatest pleasure in proposing a vote of thanks to him for his criticisms to-night.

Mr. MAURICE WEBB briefly responded.

Romanesque Sculpture of the Pilgrimage Roads*

BY SIDNEY TOY [*F.*].

A THOROUGH knowledge of the sculpture of the Middle Ages is as essential to a true understanding of the forces by which our ancestors were governed as the study of their manuscripts. By this means the trend of their thoughts, their aspirations, and the failings to which they were subject found ready and relatively permanent expression in stone, and may be read easily to-day by human beings actuated, more or less, by similar sentiments. Probably at no period was such profuse use made of this means of expression and decoration as during the eleventh and twelfth centuries. In the religious buildings of this period practically every salient feature was impressed into service and carved into some form, natural or allegorical, and even whole façades were covered with sculptured embellishment. Subjects were chosen from a great variety of sources, though those from the sacred Scriptures and the mediæval books of sacred legends were most commonly employed. These are treated with a freedom and individual licence of rendering which assists in no small measure in providing a most clear indication of the sentiments of the age. We are fortunate in that there still remains, particularly in France, Spain, and Italy, a considerable amount of this invaluable art.



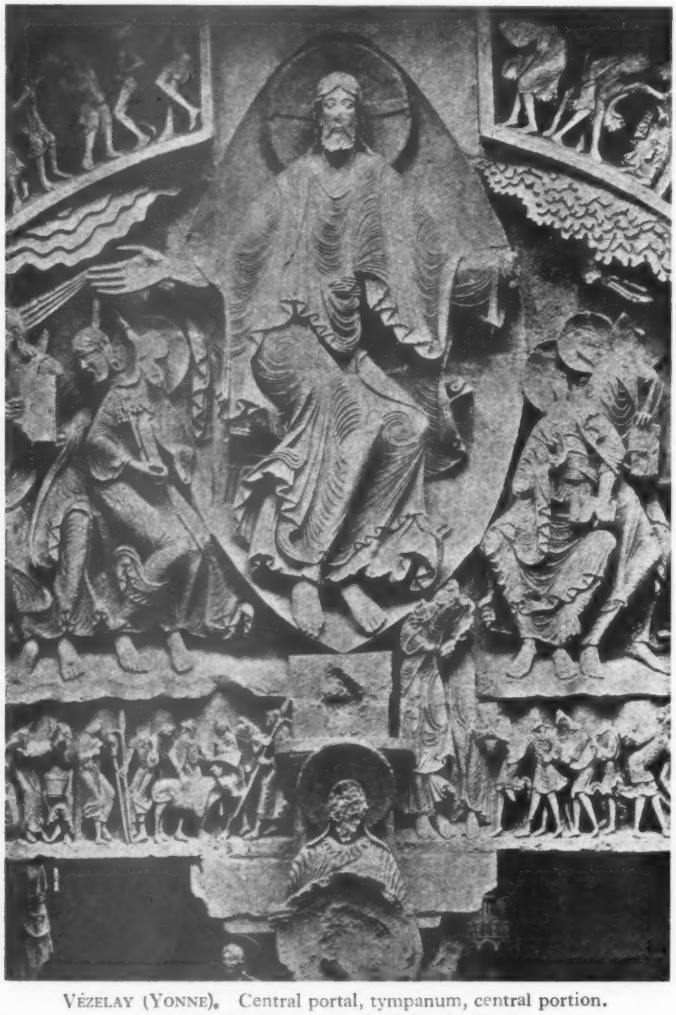
LA CLARITÉ-SUR-LOIRE (NIÈVRE)
Lintel of southern portal, now inside church. Presentation in the Temple

The work by Mr. Porter consists of one volume of text and nine volumes or portfolios of photographic plates, six of the portfolios being devoted to examples from France, two portfolios to examples from Spain, and one to those from Italy. The photographs generally are distinct, are chosen from numerous religious buildings, and are of sufficient size to illustrate the subject clearly.

The text is divided into two parts, the first dealing

**Romanesque Sculpture of the Pilgrimage Roads.* By A. Kingsley Porter. [Boston : Marshall Jones Company. 1923.] Presented to the R.I.B.A. Library by the Author. 10 Vols.

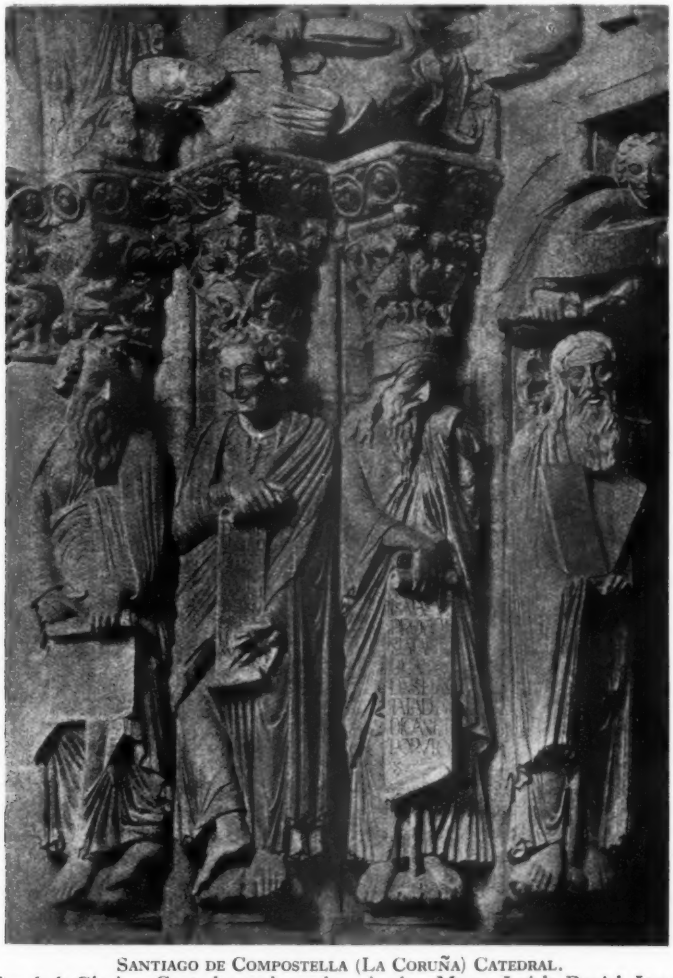
with the influence of the Cluniac school on Romanesque sculpture, and the second of that exercised by the great pilgrimages of the Middle Ages, with particular reference to the pilgrimage to Compostella. This is preceded by a long and valuable list of dated monu-



VÉZELAY (YONNE). Central portal, tympanum, central portion. Detail of the Pentecost, St. John the Baptist

ments, from the tomb of Boëthius at Venasque, erected in 604, to the doorway of the cathedral at Altamura, built in 1316; and at the end of the volume there is a copious bibliography. In the first part the author deals at considerable length with the question of dated monuments, contending that generally the documentary evidence should be accepted as giving the actual date of the monument. He examines the reasons usually put forward for assigning later dates in order to make the buildings agree with archæological theory—namely, (1) that the construction of Romanesque buildings proceeded very slowly, and therefore may be of periods much subsequent to the dates of the documents recording their commencement, consecration, or even completion; and (2) that the edifices under considera-

tion were rebuilt after the dates recorded. In regard to the first he considers that, though the theory might hold good in respect to certain Gothic monuments, its application as a general rule to the Romanesque period is unreasonable. Often a first consecration marked the completion of the choir, and a second the completion of the whole church. In exceptional instances the consecration was hastened or postponed. " But to argue from such exceptional cases—I do not know of a single one in the twelfth century which can be proved—that all consecration dates are misleading is illogical and unwarranted." In respect to the second objection, although instances of immediate reconstruction might occur, it was certainly not the custom in the Middle Ages to pull down a new church as soon as it was finished. Romanesque art was not of uniform development, and the theory of a gradual evolution is therefore misleading. It is much more safe, he says, to trust the evidence of contemporary records than to rely upon archæological theory; especially in view of the fact that whether such monuments as the golden altar of S. Ambrogio, Milan, be of the ninth or of the twelfth century, the sculptures of Cividale of the eighth or of the twelfth century, or the Baptistery at Florence of the



SANTIAGO DE COMPOSTELLA (LA CORUÑA) CATEDRAL.
Portico de la Gloria. Central portal, northern jamb. Moses, Isaiah, Daniel, Jeremiah.

sixth or the twelfth century, are still points of dispute. The question of the assignation of a date to any given monument is not simple, and many buildings are perfect enigmas in this respect in that they present features which appear to overthrow all preconceived ideas founded on comparisons of mouldings and other details. This careful examination of the subject is therefore most welcome as a valuable contribution to the solution of a difficult problem. That the author is as emphatic in his deduction in cases where they appear to be arrived at from examination of illustrations only as in those derived from the study of actual monuments is a qualifying circumstance, but he has presented us with a thoughtful treatise which should receive the careful attention of all students of the period. His arguments are supported by many examples culled from an extensive field.

It is unsafe, however, to draw any conclusion as to the date of a building from one factor alone, either from documents relating to it or from its details. An old structure possesses a quality not easy to define and quite distinct from details, but which is of the very essence of the structure itself. It can be best described, perhaps, by the word atmosphere. This quality is more or less clearly stamped by every period—it is unlikely, for example, that there will be any question in the future as to the work of the twentieth century, build in what style we may—but it is a quality discernible only

Issoire (Puy-de-Dôme), St. Austremoine
Capital of Ambulatory. The Last Supper

by those who have a practical knowledge of construction and the development of its principles, and who have also grasped the spirit of the age under examination. It is only by a just balance of this fundamental factor with the documentary evidence and the details in each particular case that a satisfactory conclusion will be attained.

The important influence exercised by the pilgrimages to the shrines of saints on the development of mediæval art is examined at considerable length in the second part of the volume of text. The sculpture of the principal churches on the four pilgrimage roads to Santiago is compared in order to reveal the direct relationship it bears to that of the great church of the shrine itself and also the influence it shows of the Cluniac school. "The pilgrimages united the art of Europe and even of Asia. But the most important contribution of the pilgrimages to mediæval art was the group of sculptures produced in the twelfth century along the lower part of the road of St. James." The writer therefore examines in detail some of the sculpture of such great churches on the pilgrimage roads as Souillac, Angoulême, St. Sernin at Toulouse, St. Trophime at Arles, and St. Gilles, explaining the origin of some of the obscure subjects.

Throughout the whole of his treatise the writer keeps in direct touch with his illustrations, to which he makes continuous reference and of which there are over fifteen hundred. So that it is possible for the reader to follow closely the remarks made and—to the extent which a photograph will permit—to judge for himself of their value. The work is evidently the result of indefatigable labour and much painstaking research, and, whether his strictures are accepted or not, the writer has merited the unqualified thanks of all students of mediæval art.

St. Paul's Cathedral

The publication of the following statement has been authorised this week by the Commission of Experts who have been examining St. Paul's Cathedral since 1921 :—

"We hope to present to the Dean and Chapter in two or three weeks a detailed report giving the results of our investigations into the condition of the Cathedral, together with fuller reasons for the conclusions expressed in our interim report of December 29, 1924, and details of the methods of preservation therein suggested.

"Suggestions appear to have been made that the building is unsafe, and that those visiting or worshipping in the Cathedral incur a risk by so doing. There is no foundation, in our judgment, for any such suggestions.

"The methods we have recommended for strengthening the main piers of the Cathedral will, we are satisfied, if carried out, restore these piers to as good a condition as they were in when originally built, and the probability that any further work will be required is a very remote one. Had danger been imminent, or likely to occur in the near future, we should have recommended otherwise.

"We are in effect recommending a continuance of the work that has been carried out in the past 12 years by the Cathedral authorities in refacing two of the main piers, but with the important addition of first strengthening the interior of the pier. The preservation work already done by the Cathedral authorities includes also extensive repairs to the Lantern, the Stone Gallery, and the Crypt, and the money spent thereon has been wisely employed."

A meeting was held in the Vestry of St. Paul's Cathedral on the 27th January which was attended by the Dean and Chapter, the Trustees of the Fabric (the Archbishop of Canterbury, the Lord Mayor of London, and the Bishop of London), the Cathedral architect and the expert advisers, the Editor of *The Times*, and the Chapter Clerk. It was resolved :—

That a Committee be formed consisting of the Dean and Chapter with the Chapter Clerk, the Treasurer of the Fabric, and the Cathedral architect; the expert advisers; one member nominated by the Ecclesiastical Commission, one member nominated by the Royal Institute of British Architects,* and one member nominated by the Institution of Civil Engineers; and not more than four members—men of recognised public standing—co-opted by the Committee.

CORRESPONDENCE.

Dallinga, Lower Road, Fetcham, Surrey.

To the Editor, JOURNAL R.I.B.A.

DEAR SIR,—Having been intimately associated with the practice of conservation of ruinous arched and vaulted buildings by means of the internal consolidation of their masonry, I feel impelled, in the interests of preserving St. Paul's Cathedral, to point out the extremely grave danger which attends the attempt to repair the eight main piers of the dome with cement grout applied under pressure and by the piecemeal replacement of damaged facing stones.

Cement grouting as a probable cure for damaged masonry has been put to the test on several ruinous

* Mr. William Dunn [*F*] has been nominated to represent the R.I.B.A. (see p. 235).

buildings during the last twelve years and has been found wanting.

The basic idea of attaining homogeneity in the several disunited masses of masonry is admirable, but this homogeneity is not, in fact, produced by means of cement grout except in a limited number of special cases where all conditions have been favourable to its application and the loading of the masonry has not been excessive.

And, supposing the conditions were favourable at St. Paul's Cathedral, as the Commission's second Interim Report confesses that they are not, the increase of strength would be in no way proportionate to the intense stresses in the piers and to their conflicting lines of action. In properly designed measures of repair the material means proposed and the forces which they are to meet and control must obviously be considered together. In large decaying masonry structures where the loading is eccentric, grouting is altogether inadequate ; and even conscientious, workmanlike rebuilding of damaged portions in solid stone and cement has been found powerless to prevent movement of important masses. Where the forces inducing movement are of sufficient magnitude the fractures take place indifferently and pass alike through cement joint or sound stone.

Additional works, such as the provision of reinforcement properly calculated to apply to the conditions of loading, become necessary in such cases, and each case must be considered on its merits.

To enable this calculation for additional works to be made successfully the building must be studied and comprehended as a complete entity with all its conflicting interplay of arch and buttress pressure and eccentric loading ; for, though the main piers may be suffering from the weakness of their own construction with an incredibly feeble rubble core, they are also being bent and burst by movements induced by the oblique arch thrusts set free and transformed from dead to live loads by the partial, but ever increasing, failure of the buttress system.

In an admirable article contributed to the JOURNAL of 24 January by Mr. William Dunn the difficulty of a proper analysis of the loading upon the piers is pointed out, and the most astonishing and mutually contradictory statements have been made by eminent engineers upon the subject.

Wren's arrangements of drums, diaphragm walls and counterforts are indeed complicated, and, to quote Mr. Dunn, are such " that it passes the skill of man to determine the exact intensity of the stresses."

Now, while this may be so at present, the skill of man must be directed towards the solution of the problem, for, while the loading is baffling to the ordinary methods of calculation, it is possible, by means of a process of my invention to obtain a thoroughly clear view of its nature and of the actual and relative importance of the several parts of Wren's intricate but reasonably designed structure.

At any moment during the operations, the pressure of the grout or the removal of a facing stone may occasion a readjustment of the arch play that can only result in disaster, for the experiments are taking place upon piers to which no banding has been applied and beneath arches for which no centres have been erected.

It should not be necessary to point out in a scientific journal the probable and almost inevitable effect of this most extraordinary neglect of elementary precautions, but the fate of the central tower of Chichester which fell during the too long delayed shoring operations is a clear indication of the result of procrastination.

While I believe that Wren's great dome may still be saved intact by the immediate application of comprehensive measures of repair directed towards the improvement of the building as a whole as well as in its separate parts, I regard the present patching proposals with horror as likely to bring about the ruin of our national monument and to make a futile sacrifice of the lives of those employed upon the works.—Yours faithfully,

WILLIAM HARVEY.

Halley House, 46 Vauxhall Bridge Road, S.W.1.

2 *February* 1925.

To the Editor, JOURNAL R.I.B.A.,—

DEAR SIR,—As assistant for some years to Mr. Somers Clarke, who preceded Mr. MacCartney as Surveyor to St. Paul's Cathedral, I may perhaps claim to possess some acquaintance with the anatomical structure of the fabric and its existing state of decay.

In these circumstances may I venture to suggest that the proposals outlined by Mr. William Harvey for controlling the movements which are still active within its vital parts should be examined without delay by (*a*) the present Commission of Architects and Engineers, and (*b*) by Dr. Stanton, of the National Physical Laboratory. The proposals referred to appeared in the *Architects' Journal* of 14 and 21 January 1925.

In the meantime, I believe that members of the Institute would welcome an opportunity of hearing Mr. Harvey's own exposition of his views in the form of a public lecture in our galleries.

The general public is rightly much exercised in mind over the threat to one of its most cherished possessions, and it does appear to be desirable that the profession as a whole should explore every avenue of investigation which is likely to lead to the preservation of Wren's great dome for future generations.

Mr. Harvey has spent most of his professional life in studying great historical buildings in relation to their balance and their tendencies to movement, and is steeped in knowledge of an unfamiliar character which directly bears in a surprising manner upon the great problems presented by St. Paul's.—Yours faithfully,

FREDK. CHATTERTON [*F.*].

ARCHITECTS AND WORKMEN A CENTURY AGO.

The Sir John Soane Museum,
13 Lincoln's Inn Fields, W.C.2,
20 January, 1925.

To the Editor, JOURNAL R.I.B.A.

SIR,—Those who read Mr. Maurice Webb's article in the JOURNAL of 10 January may like a specimen of how these things were done a century ago. Thos. Martyn, to whom Sir John Soane writes in a Pauline manner, will be found in the list of Bank tradesmen in chapter 4 of *The Works of Sir John Soane*. He was employed in many another of Sir John's buildings. The actual supervision of work, with the contact that it involves, will no doubt eventually be recognised as an essential part of an architect's training. Without fussy interference, we can at any rate discourage the idea that we can be impressed by a sudden increase of men, who disappear when our backs are turned. I cannot think such methods, of which one has heard rumours, would ever be adopted by reputable firms. I feel convinced myself that the interest of the workman in the work is an essential part of a good building, and I know very well that it exists now as it has in the past.—Yours sincerely,

ARTHUR T. BOLTON,
Curator.

WILLIAM TAYLOR TO SIR JOHN SOANE.

Home Office Whitehall,
31 *March*, 1834.

SIR JOHN,—The kindness you have on many occasions evinced towards John French (who after being near 30 years employed in his trade of carpenter, at the Bank, has recently been dismissed) induces me to take the liberty of Soliciting your further Kindness in his behalf—,with a view if possible to get him reinstated in his Employment.—I think it right candidly to explain that the cause of his dismissal was that of absenting himself without leave from his Work, and drinking, and when he attended to resume his Work he was told by the Foreman to go about his business, a result which he had a right to expect and perhaps richly deserved, for he had no excuse to offer for his absence, and his spirit was too high to apologise for his conduct, and beg to be forgiven—I am too sensibly aware Sir John that this was not the first time, and but for your kind interference, he would probably been dismissed before but he appears now truly penitent and declares nothing shall ever induce him to commit himself again, I do really think he has seen his folly, and is sincere in his promises of amendment, and that if through your kind interest he could be reinstated, he would be truly grateful and not again offend. Altho' his manners are very blunt, he possesses many good points in his character, is an excellent Workman, and well suited to be employed in such a place of trust as the Bank, for I am persuaded there was never a man more Strictly honest ; I have known him well for many years, and feel a deep interest in his welfare having married his Sister ; I have often heard of your Kindness to him, and urged him to make his present situation known to you, but this however he could not summon up resolution to do, and thus it is that I have ventured to address you on the subject a liberty which I hope you will excuse,—he has now I am sorry to say expended his last shilling, and having myself a Family of eight Children to support, it is not in my power to render him much Assistance. Probably Sir John a few lines from you in his behalf, to Mr. Cottrell,* the Bank Surveyor would have the desired Effect, and induce that Gentleman to permit French to return to his work, which will confer a very great obligation on him, and no less so on

Your most obedient Servant
WILLIAM TAYLOR.

I beg to add Sir John that I am one of the King's Messengers attached to this Office, and in case you should desire to see me on the subject of this intruding Letter, I should be happy to have the honor of Waiting on your at any time you may appoint.

SIR JOHN SOANE'S REPLY.

L. I. Fields,
3d *April* 1834.

SIR,—An application having been made to me requesting my mediation in favour of John French who has been recently discharged from your employ by the Foreman at the Bank, after having been nearly 30 years in the service of your Father, and yourself in consequence, as I am informed, of some irregularity in his conduct for which he now sincerely repents ; as I have always (notwithstanding his failings) entertained a high opinion of his industry and integrety I feel much interested in his welfare, and should feel greatly obliged by your personal enquiry into the circumstances of this dismissal, and if possible his reinstatement in your employ.

I am, Sir,
Your very obd st
J. S.

To MR. THOS. MARTYN,
GREENWICH.

THE WREN SOCIETY.

The first of the annual volumes published by the Wren Society is devoted to St. Paul's, and in view of the present condition of Wren's masterpiece, as revealed by the Expert Committee's report, the reproduction of over fifty of the architect's original drawings for the Cathedral is of more than general interest.

From these drawings, which are reproduced, most of them for the first time, from the All Souls Collection at Oxford, can be traced the evolution of the design from the early pre-Fire sketches to the conception as finally realised in the form we see it to-day.

A complete set of the "Warrant" drawings is given, and other interesting plans such as the "Model" show the tireless search of the artist for a form worthy of his great enterprise.

Only a limited number of these valuable records have been printed, and members and students wishing to obtain a copy should make early application to the Hon. Secretary, Mr. H. Duncan Hendry, A.R.I.B.A., 43, Doughty Street, London, W.C.1, enclosing a subscription of one guinea. The volumes cannot be obtained except through the Society.

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* No doubt, Professor Charles Cockerell, R.A., who succeeded Sir John Soane as architect of the Bank on his retirement, 16 October, 1833.

Applications in Building and Foundations of Modern Engineering Construction

Discussion on Dr. Oscar Faber's Paper (see JOURNAL, 24 January, pp. 165-185)

MR. E. GUY DAWBER, VICE-PRESIDENT, IN THE CHAIR

Mr. H. D. SEARLES-WOOD [*F.*]: I have great pleasure in proposing a vote of thanks to Dr. Faber for his very valuable Paper on Foundations. It is a subject that all architects are deeply interested in, and Dr. Faber has treated it in a way which gives those whose mathematics are not very advanced valuable results in the tables which all can understand and use without testing them by working out the formulæ. As I understand Mr. Etchells will second the resolution, I will leave to him, and also the eminent experts whom we have with us to-night, the mathematical part of the analysis.

I happened to be concerned in the building adjoining the raft in Lower Thames Street, and I watched it being constructed with great interest, as we were extremely anxious to see whether the raft was or was not connected with our foundations. And that is a point which is rather interesting to us all.

There is one thing I would very much like to ask Dr. Faber about. He is carrying out a very important building over the Mansion House Station of the District Railway, and as I have built quite close to the same spot I am very interested. When I was building there I was very anxious to know what was the effect of the vibration produced by the railway trains on my foundations; and what I would now like to know is, what allowance he has made for those steel stanchions which go down below the lines, because there is constant vibration all the time.

The Shanghai examples he has given us are very interesting. I had particulars of a failure in a factory built many years ago where the building failed, though the central stanchions in the warehouse were calculated to take up all the live loads, and the surrounding walls settled through insufficient foundations. The surrounding walls were calculated to take the dead loads. The consequence was that the building was wrecked by the walls going down and the stanchions going up. Of course, such a failure could not occur where reinforced rafters were used.

I would very much like to know what the effect on the surrounding buildings is of a huge building like the Shanghai Bank going down 12 inches. It must be an anxious time for the other people who have buildings all round when they see this sinking taking place.

The interesting results of the cement testing and the valuable tables of the supporting powers of various subsoils, both suggest the importance of a revision of the London Building Acts, which are now being considered, as well as a revision of the British Engineering Standards Association Specification for Portland cement.

I have very great pleasure in proposing a vote of thanks to Dr. Oscar Faber for his contribution.

Mr. E. FIANDER ETCHELLS [*Hon. Associate*]: In response to your invitation, Sir, I rise to second the vote of thanks, and at the same time I should like to make a few remarks.

In the first instance, the Institute is to be congratulated on having such a useful Paper presented before it; it is a very masterly summary of a very difficult problem. And, because the problem is difficult, we are not all agreed upon the answer. Perhaps at the end of to-night's discussion we may be a little nearer, but because of the multifarious disuniformities of Nature, the question will never be finally settled to everybody's satisfaction, and in the centuries to come, if this Institute endures so long—on account of the stability of its foundations—the then members will still be discussing the burdens of an oppressed subsoil.

I should not myself blame Rankine with regard to the careful assumptions he made with respect to the clay. I know the very clay which Rankine dealt with in the grounds of Glasgow University; it is a clay of a very ununiform nature. Some parts are slippery and other parts are crumbly; and, with that prudence which is so well known as a northern characteristic, he chose the safer course. The glacial clays at Glasgow and the London blue clay at the depth of the London Tubes are very dissimilar materials.

With regard to the Paper, it certainly has removed some of the problems from the realm of opinion to the realm of ascertainable fact; and that is one of the advantages of science. Science is impersonal. The appeal is to instruments and to Nature herself, and not to the uncertainties of opinions influenced by our temperaments and the complexities of our contractual obligations.

With regard to the general formula for foundations, it has the advantage of including the extreme cases under one general rule, and it has an austere beauty which to the mathematician is as charming as the serene proportions of some building devoid of meretricious ornament. It is not only buildings which can be beautiful, formulæ can be beautiful too; they can be beautiful in their suitability to their purpose.

With regard to the proposal to add the " hydrostatic pressure " to some agreed initial pressure, several points must be considered. St. Paul said, " No man liveth to himself alone," and I leave it to you as to whether a man may design his building on a certain assumption, taking into account " hydrostatic " pressure, and then have his neighbours around him excavating to a greater depth than his hydrostatic conditions permit. It is one of the desirable features of building legislation that a man shall be as free as possible from the consequences of his neighbour's excavations. Doubtless the members of this Institute will take due care that, in whatever proposals they have to put forward, they will put them in such a manner that a man's plans are not likely to be upset by the deeper plans of adjoining owners.

With regard to the question of what level you are to commence hydrostatic pressure, Dr Faber suggested he should go below the " weather level." The purpose of that formula itself was to get away from the vagaries of personal opinion. He wanted to remove an uncertainty, but it is possible that the uncertainty is not removed but is put into some other place. For example, " What is the weather level ?" It is one of the most debatable points imaginable. It is very hard to determine, and within the last two years I have known cases where there have been voids at a depth of 8 feet, 9 feet and 10 feet under the concrete foundations of buildings which have settled. Those voids were due to the loss of water content. I do not think Dr. Faber has in view any particular figure. But suppose a depth of 10 feet were taken as zero, that would probably meet all reasonable requirements of the case. In that method of design it would have to be decided what your initial pressure would be, and there again there is time and opportunity for discussion. I can understand district surveyors who are not prepared to take the full maximum pressures for foundations which are at or near the surface level. They may, for instance, say, " I will let you use four tons per square foot if you go deep enough, but as you are only taking away the top soil one or two tons per square foot is quite enough. Their judgment is lying in the same direction as Dr. Faber's more mathematical theory. They both endeavour to get sound results, and because both sides are anxious to find the truth they will approach nearer to it.

With regard to several foundations not within the County of London, I have seen houses built directly on a meadow without removing a blade of grass. I have also seen houses built directly on the refuse tip of collieries. Those cottages were sold, and within two years of the sale cracks appeared in the walls, which is, of course, only to be expected.

With regard to a common requirement that aggregate for concrete is to be gauged to pass a 2-inch sieve, I have seen, both in Luxemburg and in Germany, mass foundations of concrete which contained " plum stones " 8 inches in diameter ; and where the concrete is in sufficiently large masses and not reinforced I do not see any great disadvantage in the proposal.

With regard to an example of another type of foundation, a reinforced concrete bunker in the Midlands, the casing of the central pillars was burst off, and the binding broken, and some of the reinforcing rods were crumpled. The structure was designed on the assumption that all the pillars were loaded uniformly, without any attempt to take into account the relative deflection of the beams. But that was not the cause of the failure. The real cause lay in the fact that the compressive resistance of the subsoil was not uniform. Under the central portions the contractors had come across harder rock and had not reported the fact. The ends of the bunker, only resting on gravel, had settled down, and the central pillars were taking too much of the load. Therefore it is not only a question of change of uniformity on the top load which must be taken into account. The possibility of variations in the bearing power of the soil below must also be considered. It is an extreme case, because what the contractors found should have been reported to the architect. When spoken to about it the reply was, " I thought it did not matter ; it seemed as good as the rest to carry the load."

On another point, I have been at pains at various times to try and *ask the buildings* themselves what the correct foundation pressures should be. One may seek the results of experience as enshrined in books, but there is a more direct method. It is the appeal to laboratory methods and experiments. But no method can be so successful as *asking the building itself*. It may not be able to speak in words, but it is said that actions speak louder than words. In some of the cases which have been brought to my notice settlement has occurred in buildings carrying actual loads as follows—that is to say, the weight of the buildings and the contents :—

Sand, 2 tons per square foot.
Clay, 4½ tons per square foot.
Alluvium, 1·7 tons per square foot.
Clay and sand mixed, 1·8 tons per square foot.

I admit that these are exceptional cases, and therefore should not be used as the basis for designs, but they are facts which should not be overlooked. The additional experiments and the formulæ advocated by the author to-night would give the additional information necessary to determine the reasons why the pressures were excessive in those particular cases.

Another point is, it is not so much uniform settlement of a building which matters. In this case, as in some others, the principle is one of relativity. It is a question of relative settlement between various parts.

If every part of a building settles one inch, no harm is done. If only one part settles one inch there may be ungainly cracks in the walls or in some of the plaster work. In designing a building so that these cracks will not take place one has to take great care in proportioning the loads. One desirable feature is that the centre of pressure from any pillar shall come as near as possible over the centre of the area of the foundation in question. With stanchions near the party walls where the foundations are different levels it sometimes causes a difficulty which it takes all the ingenuity of the architect to overcome.

Before I go on I must define one or two terms. I shall show you a method of designing foundations which has been tried in several instances, and I have known no failures. By "imposed weight" I shall mean "superimposed weight," or the "live load," as it is sometimes called. By "structural weight" I mean the "dead weight" of the materials only. This method, in regard to which I have not known any failures, is to take the pier or pillar in which the ratio of the "imposed weight" to the "structural weight" is a maximum. Secondly, determine the area of foundation by reference to the total permissible intensity of pressure on the bottoms. Next, determine the value of the structural weight per area on bottom. Then the area of your other foundations should be designed to carry structural weight only at the same intensity as given above. For example, take an "imposed weight" of 600 tons and a "structural weight" of 200 tons, or a total of 800 tons. In that case the imposed weight is three-fourths of the total. If the ground will take 4 tons per square foot, then the area required for the bottoms will be 200 square feet. In this case the rate of the structural weight to the area of the base will be 200 tons spread over 200 square feet, or 1 ton per square foot. If we have a stanchion carrying 500 tons imposed weight on a 200 tons structural weight, that foundation will be designed to carry a structural weight of only 200 tons at 1 ton per square foot. The foundation will be of the same area as before, but there will be the advantage that when the building was erected and unloaded the pressure on all the foundations would be uniform. When the building was fully loaded the first stanchion designed would carry the maximum pressure, and the others would be carrying less than the maximum. The advantage of the method may not appeal to those whose first consideration is the initial cost of the building, but it is one of the methods of keeping down the cost of maintenance. It also points out the desirability of keeping the ratio of imposed weight to structural weight as uniform as circumstances will permit.

Another point concerns the more frequent testing of foundations. In one case which came to notice recently the platform was loaded, and yielded to 8 tons per square foot, and it was proposed to use that foundation afterwards for a load of 4 tons per square foot, giving a safety factor of 2. Safety factors are dependent on the particular purpose, and the day of taking one uniform safety factor for everything is, I hope, gone for ever. (Hear, hear.)

There are many other points which I should have liked to take up, but there are many other speakers. I have rather scamped over some of the ground I have touched on; I have taken certain points and made them discernable, but not so clearly as I should have liked. I must leave to other speakers what remains.

I thank you for your patience, and I hope I have not trespassed too much upon your time in doing what I am very pleased to do—that is, second the vote of thanks to Dr. Faber for his exceedingly informative Paper, which I am sure you will afterwards read with profit and perhaps, as it will certainly be in my case, with pleasure also.

Mr. EWART S. ANDREWS: I have very much pleasure in supporting this vote of thanks. I do so with particular pleasure, because I happen to have been working in a very similar field to that covered by Dr. Faber, and I have now watched for many years with great admiration, almost with envy, the very excellent work that he has been doing. I would like to draw the attention of the younger members to what is a very significant fact. Dr. Faber is a man of very high academic distinction. There are men who are so foolish as to imagine that because a man is of high academic distinction, therefore he is not of very sound practical judgment. I put it to you, sir, and to the meeting whether you cannot see, running right through this paper, evidences of very great practical skill on the part of Dr. Faber. I think that should be an encouragement to the younger men to pursue their studies into the theoretical side, because I am convinced that, provided a man has sound judgment—and without it he can do little—the addition of scientific and theoretical knowledge is of immense value to him.

Coming now to the details of this paper, Dr. Faber could not have chosen a more important subject to discuss with the Royal Institute of British Architects; it is a subject which has been, I am afraid, very much neglected by the engineers. We have studied, in minute detail, the stresses in steel work and in reinforced concrete, and these fundamental subjects concerned with foundations have been allowed to lie very much in the background.

There are one or two points I would like to mention. One is that it seems to me that experimental evidence

proves that the pressure that you could safely put in a foundation does depend upon the size of the foundation. Dr. Faber has suggested that if the soil acts as a material with cohesion only, then the periphery is of vital importance. And I think the larger the foundation, the smaller should be your intensity of pressure. That point, I think, has been very fully brought out in one of the most gigantic failures of which we have record; and as I do not think all of you may have read of this case, I will briefly mention it. A full account will be found in the Proceedings of the American Society of Civil Engineers, 1916. It relates to the grain elevator at Winnipeg. It was on a reinforced concrete raft, and I am mentioning it because, although failures are always most regrettable, it is through failures that we learn most. That raft probably had nothing to do with the failure, but there were some remarkable results. The building, when loaded with 46,000 tons altogether, suddenly started tilting, and it went on tilting until the walls were at an angle of 26°, and then it stopped. One of the most amazing things about it is, that they succeeded in righting it, and the building finished up 14 feet above its intended level, and I think it is still functioning. But in that particular case they had been at some pains to try to ascertain the safe bearing load on the foundation, and they had made tests with the ordinary small loading cylinders, and found that four tons to the square foot should be a safe pressure. It gave way at a load of three tons per square foot. The building was founded on clay. There were 32 feet of blue clay, but beneath that there was some waterlogged white clay, and under that there was limestone. Subsequent experience showed that by some accidental freak, on one side of the building there were boulders extending 12 feet above the level of the limestone, and that is the side which did not go down; the blue clay was squeezed into the white clay, and the white clay was compacted and all the water driven out of it.

My friend Mr. Etchells has spoken, and I was hoping he might have said something about the interesting results which Dr. Faber gave us as to the strength of modern concrete. Twelve tons to the square foot we are allowed under the London Building Act, and there is no intention of altering that, I think. But I would like to point out from the figure quoted by Dr. Faber that at 28 days we have 6,810 lb. to the square inch, which corresponds to 430 tons per square foot, and it does seem hard on us to have to design for a factor of safety of over 35.

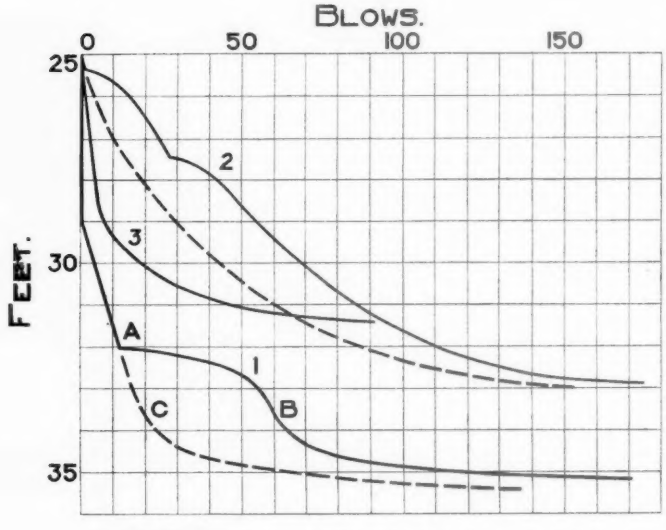
Mr. GOWER PIMM, Assoc.M.Inst.C.E.: Notwithstanding Dr. Faber's expectation that his switching off the theoretical on to the practical would be welcomed with a sigh of relief, to me at all events, interesting as the examples of practical work were, even more fascinating was the earlier part of the paper —that dealing with theory.

Dr. Faber has reminded us that so far as soil can be regarded as a perfect fluid, there is only one depth at which we can place our foundations, and it is only by virtue of the degree to which our soil departs from a perfect fluid that we can depart from that depth. It is, perhaps, providential that in many cases there is this licence as compared with what would be required for the case of a perfect fluid.

I endorse heartily what Mr. Andrews said, not only with regard to Dr. Faber personally, but on the question generally of theory and practice. This is a subject which has been very much discussed, and it is time that they were brought more into harmony. Mr. Etchells once gave a delightful definition of theory. He said "Theory is meditation upon practice," and I do not think we can have anything better than that. I think Dr. Faber has left us with a great feeling of confidence after hearing his paper. He not only seems to get to know more about a subject than, perhaps, most people, but more important, he gets to know how to apply it, and he leaves us with the feeling that there is not much we cannot find out about a subject which is worth finding out, and that if we cannot find out as much as we should like to, we can at least apply what we do know rationally. I am reminded of an alarming statement made by an eminent engineer. The question which was being discussed was the transmission of bending moments from beams to columns. He had previously said that as no one could possibly ascertain what tension existed in a column, he personally made a practice, since concrete was a more economical material for sustaining compression than steel—he made a practice of constructing his columns in reinforced buildings in unreinforced concrete, merely putting in sufficient longitudinal steel to hold the binding in place. He was reminded that there was tension in columns, but his reply was that, as no one knew what the extent of it was, the only thing to do was to ignore it. I think a few minutes with Dr. Faber would cause him to have some sleepless nights.

In the later part of the paper Dr. Faber touches upon one thorny subject, and that is the relation of the architect to the engineer. I think the time is not very far distant when the relation between the architect and the constructional engineer will be a much more dignified one than it is at present. A very strong lead has recently been given by several Government Departments, who insist that the engineer when employed shall be employed in a more dignified way than he is at present. It is a subject upon which some of us feel strongly, and I think the conditions will shortly improve.

The only other point in the paper I want to mention is that concerning pile foundations. Perhaps I may be allowed to do so, as I have had rather favourable opportunities of investigating one point, and that is, skin friction and its value. I had an opportunity, years ago, of not only ascertaining what the value of skin friction was, but also to what extent it may be removed. This diagram shows it more clearly than I could convey in words. The firm lines are the records of driving three reinforced-concrete piles commencing at a depth of 25 feet below the surface, since above that depth driving was very free. Penetration is plotted vertically, and the number of blows delivered is plotted horizontally. Pile No. 1 was driven to a depth of 32 feet, when driving was stopped and resumed after a rest of four months. The development of skin friction during this period of rest is shown very clearly at point A. Dr. Faber said that after twenty blows (following a rest) nothing happens, and my curve No. 1 confirms this in a remarkable way; but when we get to about 40 blows we have reduced the pile to the same state, in regard to absence of resistance, that it was in when driving was stopped. In this particular case it so happened that rock was met almost as soon as driving had once more become free, and at point B we get a change in the condition from that produced by the elimination of temporary skin friction by repeated blows of the monkey to that due to contact with the rock. Skin friction will now again develop, and since contact of the toe with the rock will now prevent any considerable vibration, the skin friction will now be permanent, and is a very valuable asset; but in my own view it depends upon there being little or no vibration. The dotted line shows what would probably have been the driving record if there had been no considerable stoppage. Curve No. 2 is the record of a pile in the driving of which there were two short stoppages of a few hours only, and these points, although, as would be expected, they are very much less marked than the longer stoppage in No. 1, are nevertheless clearly shown. No. 3 is the record of a pile which was driven continuously and is shown for the purpose of comparison.



I think the presence of a stratum the bearing strength of which may be inadequate to carry the load coming on the pile, nevertheless, by limiting the vibration, enables the full effect of skin friction to be developed. I hope Dr. Faber will be able to tell us more about these points. It is, of course, possible to be too cautious. In one case a pile was being driven and it nearly reached a specified set. The resident engineer would not pass it at the time, but he told the contractor he might come and drive it again, but after a period of rest the pile refused to move.

I have very much pleasure in supporting the vote of thanks.

Mr. H. KEMPTON DYSON (Hon. Sec., Inst. of Struct. Engineers): I would like to tender my thanks to Dr. Faber for a very valuable and extremely interesting paper. I have myself been particularly interested in the summary of the theory. At this late hour I cannot go into matters so fully as I would wish; I shall only have time to refer to a few matters which I regard as of some importance.

First, Dr. Faber refers to cohesion, as it may be termed, in sands being due to the presence of moisture. The difference between one clay and another is, generally, not so much a matter of size of grain as of water content, and the effect of water seems to be more in the matter of giving cohesion, as the size of the particles decreases. That is why sand does not develop so much cohesion, if it is composed of coarse particles, when water is added, as does finely granulated clay.

I think it is a little inadvisable always to consider a very wet soil or a very sloppy clay as equivalent to a fluid as regards pressure and bearing power. If you agitate clay in suspension in water it will act just like fluid of greater density than water, equivalent to the weight of the suspended matter in the water. Yet I found when putting loose filling consisting of ashes upon mud, the mud after a while became consolidated, and the pressure of the mud upon the soil beneath was considerable. The weight of mud and sand, ballast or other filling, must be reduced when in water by the buoyancy of the material if the water can get into it. In constructing some foundations on the mud foreshore of a harbour during the war I could not get piles in time, as we were unable to get the quick-hardening

cement Dr. Faber refers to, so I made a spread foundation and calculated the resistance of the soil by taking account of the filling which would be on top of it, but reduced the weight of that filling by the buoyancy of the water. And those foundations were successful, though there was settlement when the load came on and by consolidation, and there was more settlement as one got further out into the harbour.

A detailed treatment of the problem of determining the effect of both friction and cohesion in granular materials was given in Appendix VII to a paper entitled " Shear, and Problems arising therefrom," read before the Concrete Institute in December 1914, and published in Volume VI, Part I, of the *Transactions* of that Society. The chief purpose of that demonstration at the time was to show the application to the shearing resistance and compressive strength of building stones, cement mortar and concrete. It will be evident that such theoretical treatment is most suitable for soils such as clay, which are granular in structure, differing distinctly from sand in that there is cohesion between the grains or particles. The paper by Mr. A. L. Bell that has been referred to, accompanied by a mathematical proof by Professor Maurice F. FitzGerald, appearing about the same time or soon after, attracted my attention, and I saw that the fundamental treatment that I had given afforded formulæ applicable to the problems of external pressure from clay and the bearing power of soils, which formulæ were of similar character to those given by Mr. Bell, and with suitable constants gave similar results. I also employed the same fundamental treatment to derive formulæ for the resistance of hooped reinforced concrete pillars which gave results that agreed closely with the test results recorded by the French Commission.

The cohesion given by the presence of water in fine sand has been referred to by Dr. Faber, and Mr. Bell gives an earlier reference to Mr. G. Wilson's experiments. The difference in cohesion between the particles with varying percentages is very noticeable by the difference in cohesion of the same clay under different degrees of wetness. The size of grain must also make a difference, so that sandy clay will differ from fine, smooth clay having the same water content, not only by reason of the difference in area of wetted surface, but also by reason of the friction between the particles differing in size and shape. The experiments indicate that the limits of variation in the coefficient of internal friction are comparatively small and, as it will be seen from the formulæ given later, do not so greatly affect the results as does the wide variation that there is in the cohesion. Whereas Rankine in treating of granular materials has a constant for the friction between the grains, Mr. Bell adds another constant for the shearing resistance. I, however, prefer to state the equations in terms of the cohesive force between the grains, because in my view that is the fundamental factor that determines not only the shearing resistance but the crushing resistance (hard clay can be sometimes like an inferior building stone), incidentally involving the height at which clay may be self-sustaining and the bearing power of foundations in clay. The cohesion is also comparatively easy to determine directly experimentally, for it is easy to pull a piece apart in a tensile machine.

In order to demonstrate the application of the

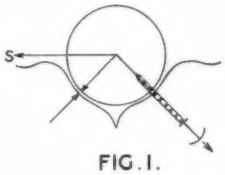


FIG. 1.

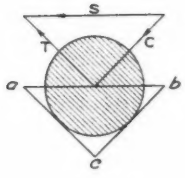


FIG. 2.

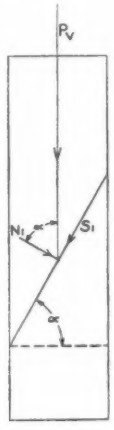


FIG. 3.

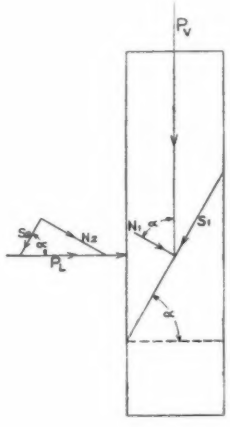


FIG. 4.

method to the present problem it is proposed to repeat some of the working given in the paper on "Shear" referred to above.

Firstly, a granular particle cohering to adjoining particles or embedded in a solid body may be considered to be situated somewhat as shown in Fig. 1, where it is shown under the shearing force S, tending to be pulled out of its surroundings, to which it is anchored (as it were) by the cohesion, and also held in position by the irregularity of surface which causes friction under the pressure that also results from the application of the same shearing force. First let the shearing force on the average grain be replaced by the tensile and compressive components at 45° (which are the equivalents of a shearing stress). Referring to bounding faces as shown, where *ac* is the average surface of friction and *bc* is the average face of cohesion, and taking the area of the face *ac* as unity, let t and c be the tensile and compressive components of the shear stress, r the cohesive resistance of the material and Φ the friction modulus.

Now $c=t=s$ and

$T=s$, $C=s$, $R=r$ and $F=\Phi C=\Phi s$.

We have for equilibrium $T=R+F$

$$\therefore \quad s=r+\Phi s$$

from which $s(1-\Phi)=r$,

and $$s=\frac{r}{1-\Phi}.$$

Now consider the combination of a normal and tangential stress as regards rupture by shearing. The effect of the normal stress will be to increase the resistance to sliding upon the plane of rupture by causing additional friction thereon.

Referring to Fig. 3. Let N_1 and S_1 be the normal and tangential forces, and let us treat them on similar lines to the foregoing.

Let A be the area of pressure.

Then $N_1=P_v\cos\alpha=p_vA\cos\alpha$

and $S_1=P_v\sin\alpha=p_vA\sin\alpha$.

The active shearing stress will evidently be reduced by ΦN_1.

As before $s=\frac{r}{1-\Phi}$, so that

$$s=s_1-\Phi n_1=\frac{r}{1-\Phi}$$

from which

$$r=(1-\Phi)(s_1-\Phi n_1) \quad . \quad . \quad (1)$$

By dividing the tangential and normal components by the area of the inclined plane $\frac{A}{\cos\alpha}$ we get

$$n_1=p_v\cos^2\alpha$$

$$s_1=p_v\sin\alpha\cos\alpha.$$

Inserting these values in equation (1) we have

$$r=(1-\Phi)\,p_v(\sin\alpha\cos\alpha-\Phi\cos^2\alpha)$$

from which

$$p_v=\frac{r}{(1-\Phi)(\sin\alpha\cos\alpha-\Phi\cos^2\alpha)} \quad . \quad . \quad (2)$$

It will be evident that the angle of rupture must be such as would cause failure under the least load, which by the foregoing formula is seen to depend upon the value of α. The minimum value is determined by differentiating p_v in respect to α and equating to zero, thus

$$\frac{dp_v}{d\alpha}=-\frac{r}{(1-\Phi)}\,\frac{(-\sin^2\alpha+\cos^2\alpha+2\Phi\sin\alpha\cos\alpha)}{(\sin\alpha\cos\alpha-\Phi\cos^2\alpha)^2}=0$$

from which

$$\sin^2\alpha-\cos^2\alpha=2\Phi\sin\alpha\cos\alpha,$$

and

$$\Phi=\frac{\sin^2\alpha-\cos^2\alpha}{2\sin\alpha\cos\alpha}=-\frac{\cos 2\alpha}{\sin 2\alpha}$$

$$=-\cot 2\alpha=\tan(2\alpha-90^\circ).$$

But $\Phi=\tan\phi$, therefore

$$2\alpha-90^\circ=\phi$$

or $$\alpha=\frac{90^\circ+\phi}{2}=45^\circ+\frac{\phi}{2} \quad . \quad . \quad . \quad . \quad . \quad (3)$$

Now insert the value of α in equation (2), obtaining

$$p_v=\frac{2r}{(1-\Phi)[\sin 2\alpha-\Phi(\cos 2\alpha+1)]}$$

$$=-\frac{2r}{(1-\Phi)\left(\frac{1}{\sqrt{\cot^2\alpha+1}}-\frac{\Phi\cot 2\alpha}{\sqrt{\cot^2 2\alpha+1}}-\Phi\right)}$$

$$=\frac{2r}{(1-\Phi)(\sqrt{1+\Phi^2}-\Phi)} \quad . \quad . \quad . \quad . \quad . \quad (4)$$

In order to determine the height at which clay will be self-supporting we substitute $p_v=wh$, where w is the weight per foot cube of the clay and h is the height in feet, and choose suitable coefficients for r and Φ. The latter will be the same probably as for dry grains, say from ·3 to ·6, and for average cases we can take, say, ·4. The cohesive resistance will vary within much wider limits—from, say, 1 lb. per square inch for soft clay to, say, 50 lb. per square inch for hard clay, approximating to shale. With value of $\Phi=·4$ from equation (3) we should get $\alpha=56^\circ$ as the angle of rupture.

Let us consider clay just on the point of sliding on the normal plane of rupture. If now we apply a lateral force of a certain amount, we can increase the vertical pressure to an extent.

Referring to Fig. 4 we have

N_1 and S_1 as before, and

$N_2 = P_L \sin \alpha = p_L A \tan \alpha \sin \alpha$

$S_2 = P_L \cos \alpha = p_L A \tan \alpha \cos \alpha$

N_1 is increased by N_2 and S_1 is reduced by S_2, so that the active shearing stress becomes

$$s = s_1 - s_2 - \Phi (n_1 + n_2)$$

As before $s = \dfrac{r}{1 - \Phi}$, so that

$$s = s_1 - s_2 - \Phi (n_1 + n_2) = \frac{r}{1 - \Phi}$$

from which

$$r = (1 - \Phi) [s_1 - s_2 - \Phi (n_1 + n_2)] \quad . \quad . \quad (5)$$

By dividing the tangential and normal components by the area of the inclined plan $A/\cos \alpha$ we get n_1 and s_1 as before, and

$$n_2 = p_L \sin^2 \alpha$$

$$s_2 = p_L \sin \alpha \cos \alpha$$

Inserting these values in (5), we have

$$r = (1 - \Phi) [(p_v - p_L) \sin \alpha \cos \alpha - \Phi (p_v \cos^2 \alpha + p_L \sin^2 \alpha)]$$

from which we derive

$$p_v (\sin \alpha \cos \alpha - \Phi \cos^2 \alpha) = -p_L (\sin \alpha \cos \alpha + \Phi - \Phi \cos^2 \alpha) - \frac{r}{1 - \Phi}$$

and $$p_v = -p_L - \frac{p_L \Phi + \dfrac{r}{1 - \Phi}}{\sin \alpha \cos \alpha - \Phi \cos^2 \alpha}$$

Differentiating p_v in respect to α and equating to zero as before we get the same results, since p_L is constant, which means that the angle of rupture is constant, so that we can use the previous working to arrive at a formula simply.

Substituting the same as was done to get equation (4) we have

$$p_L (\Phi + \sqrt{1 - \Phi^2}) = p_v (\sqrt{1 + \Phi^2} - \Phi) - \frac{2r}{1 - \Phi}$$

and $$p_L = p_v - \frac{2r}{1 - \Phi} \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (6)$$

Substituting for p_v the value wh to determine the pressure against a retaining wall we have

$$p_L = wh - \frac{2r}{1 - \Phi}$$

Proceeding as Rankine, Mr. Bell and Dr. Faber have done to arrive at a formula for carrying capacity,

$$p_v = wh + \frac{4r}{1 - \Phi}$$

which compares closely with that of

$$p = wh + 4k$$

given in Dr. Faber's paper for the case where friction is taken as negligible. It will be seen that instead of one constant the new formula has two, thus taking account of both the friction and the cohesion. Seeing that Mr. Bell takes into account the shearing value of the clay which depends upon cohesion and friction, his one constant k includes my two constants and therefore our analyses are shown to be of the same character.

As regards testing a soil for its bearing capacity, I have tested a number of different kinds of soil, and one of the most interesting was the clay under the foundations of St. Paul's Cathedral. I had heard stories about the clay being pot-earth, or a brick clay, and that it was very dry and hard. But at last I persuaded the authorities to have the Crypt floor pulled up and an excavation made by the side of one of the piers carrying the dome. I found that the clay was just an ordinary sort of brick earth, fairly plastic, so that one could mould it in one's fingers well. I took 6 inch and 12 inch square blocks of timber and put them on the ground with a hydraulic jack on the top having a pressure dial, with girders overlaid across the excavation and loaded with pigs of lead, so that I could push up against them. Thus pressure was put on those blocks of wood up to somewhere about twenty tons per square foot on the clay. I found with a pressure of about four to six tons per square foot that there was very little movement, but the movement increased with increasing pressure and eventually with twenty tons to the square foot I got over an inch of movement. The reason why the Building Acts limit the pressure on soils is to prevent much movement in the structure above and the cracking of parts. At the time these pressures were selected the foundations were not proportioned in area to the loads they had to sustain in different parts of a building, so that if one portion were stressed higher than another so highly as to move farther than the other, cracks appeared, which were unsightly, to say the least. It is difficult to estimate the exact pressure there is on the ground under St. Paul's foundations. The load is supplied eccentrically on the piers, and there is a greater stress on one edge compared with that on the other. I think the pressure varies as a maximum from six tons to ten tons per square foot, but I could not find any sign of any movement in the foundations after the building had been built. Probably it moved in the first year as surface water was drying out, but afterwards I do not think it moved at all. I found that after I had removed these blocks of wood which I had squeezed into the clay, that the clay underneath had had nearly all its water squeezed out of it immediately under the point of

application of the load. That phenomenon has been noticed in putting pressure on to wet sand. The pressure squeezes the water out of the clay or sand and compacts the sand or clay, which is largely the reason for vertical movements.

Coming to the question of rafts, Dr. Faber referred to a sort of lip on the sides of a raft to retain the earth and prevent its escaping laterally. There were some interesting machine foundations built in an early Paris Exhibition by that eminent pioneer, Cottançan, who made a reversed box foundation, as it were, by digging trenches in the ground and filled in and over the top with reinforced concrete. The dumpling left in added to the total weight of the foundation and helped to resist vibration of the engines placed on top. At a later date Considère invented a good type of foundation for very weak soils consisting of a hollow cone resting on the ground like an inverted funnel.

With the aid of reinforced concrete to-day we can effect tremendous economies both in time and in cost of material and labour in the foundations of modern heavy buildings. I do not think it is quite realised by the architectural profession what an amount of time and cost can be saved by the exercise of structural engineering skill.

Talking further of rafts and Dr. Faber's remark about the raft in one case, that at Marlborough College, forming the ground floor, I have carried out a raft under a reinforced concrete building the like of which I do not think there is another in this country. Those present may be familiar with so-called " mushroom " floors of reinforced concrete used in America, in which there are no beams to show underneath. I designed a raft at Limehouse where I have used what might be termed a " mushroom " floor upside down. But I put the splays round the pillars down into the ground ; that is I made hollows in the ground like reversed pyramids and filled concrete and reinforcements into them. Working out that system of construction versus the ordinary beams, I found it much cheaper.

I think Dr. Faber's treatment of the resistance of a pile by calculating chiefly the cohesion or skin friction is the most sensible thing that can be done. Ordinary pile formulæ found in the text books are worse than useless, because they do not represent the facts at all.

I am sure we thank Dr. Faber very much for his most interesting paper.

Mr. PERCY J. WALDRAM [*Licentiate*] : I would just like briefly to ask this question : Is the six to one concrete, six of concrete plus two of sand ? Or is it four of concrete plus two of sand ?

Mr. J. S. WILSON : As a visitor, I should like to answer one point. In that formula which has been admired by Mr. Etchells, perhaps more than it deserves, I asked Dr. Faber why he uses the constant. It is 4 k which, according to the legend on the slide, was the shearing stress per square foot. In the other term he has wh, which introduces depth. I wondered why it did not appear in the second term as well as in the first term. I think Dr. Faber intended it to be the rational expression, but apparently it is not.

Mr. F. M. P. HIGGINS : Will Dr. Faber tell us about the piles which he made of quick-setting cement ? Is it of a well-known brand the name of which I will not mention in which he had failures, especially splaying of the heads of the piles ?

The CHAIRMAN (Mr. Dawber) : We have had a most interesting paper and a good discussion to-night, and I am sure Dr. Faber will like to answer the questions which have been put.

As architects, we were extremely interested in the diagrams he showed us of the actual work done in the Custom House at Shanghai and the buildings at Marlborough College by Messrs. Newton. We have all had troubles with our foundations, and for my part I am very glad to know we have such a rock to rely upon as Dr. Faber when we get into trouble in future. I was particularly interested in that diagram which he showed illustrating the failure of the building at Harrow ; but, so far as I gather, they were vertical settlements, and I would ask what he would have done if the building broke its back in the middle and commenced to slide downhill.

I have very great pleasure in putting to you the vote of thanks which was proposed by Mr. Searles-Wood and seconded by Mr. Etchells.

The resolution was carried by acclamation.

Dr. FABER (replying on the discussion) : I want to thank you very much, gentlemen, for the very great patience you have shown ; I think you are the most long-suffering people I have ever met.

As it is now so late, I will be as brief as I possibly can. Mr. Searles-Wood asked about the allowance for vibration at Mansion House station owing to the railway. Most of our foundations were built on top of the concrete invert or raft existing under the lines over the whole site. This raft overlies good blue clay foundation. Our stresses are considerably less than the four tons usually placed on blue clay, but I cannot say exactly how much the allowance for vibration is.

Mr. Etchells, in his very interesting remarks, mentioned that he thought I had blamed Rankine too much. Well, I do think Rankine is rather to blame, because he deliberately said that his formulæ could be used, and should be used with ordinary soils, because, though he recognised the existence of cohesion in ordinary soils, he thought this cohesion was liable to be lost : when only that portion which depended on friction would remain. If you follow the Rankine formulæ to their logical conclusion you get, on the one hand, the great

carrying capacities shown on Table II, which are not inside the experience of any known man; and, on the other hand, you get the result that the foundation on the surface will carry no stress at all, which also is not within the experience of anybody. Therefore, it is clear, those formulæ do not fit practical soils. Many houses have been built (at Tilbury, I believe, about 800 houses) resting on a concrete raft which is directly on the grass, where the raft forms the ground floor, and that has been a success. According to Rankine this is impossible, showing that his formulæ cannot be applied to ordinary soils.

I agree with Mr. Etchells that tests on buildings are very useful, interesting, and important; but unless you make a test of the soil under a particular building you have no means of correlating that particular piece of experience to other buildings. If we make out a list of buildings and say "This particular building was on sand and it stood three tons to the square foot, and this other building was on clay and stood four tons" we can only use this information to a very limited extent, because the clay in one place is very different from the clay in another. If, however, we can test the shear strength and friction angle of a particular soil which is then found to carry certain loads with safety, then our experience can be related to other cases, which greatly increases its value. I am sure Mr. Etchells would be the first to agree with me on this.

Mr. Andrews, after his exceptionally kind remarks which I feel unable to deal with, touched particularly on the size of foundations and its effect on safe pressures. This question is very important, and I do not think we know all there is to be known about it. It is certain that under certain conditions a small foundation will carry a much greater stress than will a big one, and those conditions particularly include the case where there is a hard layer above, with a soft layer below. If you imagine 10 feet of stiff material imposed over 10 feet of less stiff material, and you load 1 square foot on the stiff material on top, you have 10 feet of stiff material to spread the load before it stresses the soft material. Taking an angle of dispersion of 45°, it has probably spread over 20 feet in each direction, that is, 400 square feet; and that pressure on the soft material is utterly negligible. But if you have a raft 200 feet square on top, and take an angle of dispersion of 45° from the edge of that, you find that the increased area of the lower level on the subsoil is a much smaller percentage increase on the area at the top level; and then the carrying capacity may be determined by the stress on the soft soil at the bottom. In that way, the effect of the size of the foundation on the safe pressure on it depends on whether or not there are soft layers underlying hard layers.

The way we mostly test our foundations is ridiculous. We let the foreman dig a hole, we look into it, and he hits it with a bar, and it goes in 3 inches, and he says "That's all right," or "It is not right." What happens more than three inches below the surface no one enquires; it may be that 3 feet below there is a layer of soft mud. When we spend, as we do, huge sums on buildings, it is ridiculous to take such little trouble about foundations.

Mr. Pimm gave some very interesting facts and figures about the skin friction on piles, and I would ask that the diagram he exhibited and explained may be published; I am sure it is a very interesting diagram, and would be very useful. But I think he overstated the risk of relying on this cohesion or skin friction. Unless in exceptional circumstances, as where large steam hammers are at work, you are not likely to get a vibration which is very terrible. Mr. Pimm showed that it took about forty blows to break down the cohesion. The blows used in pile driving are generally of the order of three tons dropping three to four feet. In ordinary buildings we do not get vibrations of that magnitude, and my view is that, except in very unusual circumstances, skin friction is a very proper thing to rely upon.

Mr. Dyson, in the course of the many interesting things he said, most of which I agree with, mentioned that the cohesion in clay may be somewhat akin to the surface tension which I referred to as sometimes beginning to exist in sand, though in sand it is only tiny. I am inclined to think he is right, but I do not think it matters, as far as my formulæ are concerned. I simply say—measure the cohesion, and when you have done so you can put it into the formula, and you will then be able to know what the proper bearing capacity of that soil is under various conditions. He also mentioned the use of mushroom rafts, stating that they are cheaper than rafts constructed of slabs with deep stiffening beams, and I agree as to that. But I do not think they are so good, because a mushroom raft will only distribute the load of a particular stanchion on to the area of soil immediately surrounding it. A reinforced concrete raft with stiff beams serves other useful purposes as well. In the case of the Custom House at Shanghai I carefully considered mushroom rafts, but I dismissed them, though they would have been cheaper, for the following reasons. There is, in buildings of that kind, a variation in the resistance of the subsoil which you cannot avoid, and variations in the incidence of the loading of the building; and, however careful you are, you cannot be sure that the load on one part will agree exactly with the resistance of the foundation under it. A certain cargo may come in and be stacked on one side, and practically nothing on the other. On yielding soils like that in Shanghai trouble will arise unless the raft, like a ship in a heavy sea, is strong enough to transmit part of the load from the heavily loaded area to the lightly loaded ones, in other

words, to make the whole raft act as a stiff structure and go together whatever the incidence of load may be. This a mushroom raft is ill adapted to do.

In reply to another question, the 6 to 1 concrete was 4 parts of $\frac{3}{4}$ inch crushed ballast, 2 parts sand, 1 part cement.

I cannot agree that the formula $wh+4k$ is not rational or that it should be an h attached to the k. The first part of that formula represents the hydrostatic pressure due to the depth at which the foundation exists; and the second part of the formula gives the safe pressure which can be exerted on soil, in virtue of its shearing resistance, which depends on the cohesion. It is a rational formula in every way.

The piles of quick-setting cement were made of a well-known make. We had no trouble with them, except that we hammered the piles so hard that we broke some of their heads. We had made the piles longer than we wanted them, and we continued to hit them until the heads broke, so as to get the full benefit from them. Any pile would have smashed under the treatment these received; we were going to get all the penetration and all the resistance possible out of them.

With regard to the Harrow Music School and vertical settlement, and what we should have done if it had not only been vertical settlement but there had been a movement downhill, that is exactly what did happen. The settlements were not only vertical but also lateral; there were large cracks extending up the walls, showing that some portions had slipped horizontally, and the concrete raft served not only to prevent the vertical settlement but to tie the vertical piers laterally, so that in future they will all have to go together.

The following contribution to the discussion has been received from Mr. PERCY J. WALDRAM [*Licentiate*]: "The popular idea of the relative qualifications of the architect and the engineer with regard to structural matters is fallacious and wholly unfair to the architect. He is supposed to have his head always in the clouds, whereas the engineer is believed to be the embodiment of hard-headed common sense with all the developments of science at his command. The reverse is often the case, and I would venture to submit the heretical proposition that in structural matters the judgment of the experienced architect, tempered as it is by constant daily and often hourly necessity of making structural decisions of all kinds, is often to be preferred to that of the engineer, especially the young modern engineer, who is often far too apt to rely upon what he has read or been taught at college, or, when he does think for himself, is often caught in the tangle of his own mathematics and is unable to see the wood for the trees. Too much algebra, like too much drawing, is an over-rich diet upon which to keep structurally fit.

For this reason we want more engineers like Dr. Faber, who is not afraid to think for himself and refuses to be bound by 'authority,' however orthodox.

But even more do we need architects who will take an intelligent and lively interest in structural matters.

There is far too much pseudo-science in our modern text-books and technical journals, often hidden within a maze of mathematical symbols. It would indeed be well if architects took more frequent occasion to apply the acid test of structural common sense to what is put before them.

There is, as Dr. Faber has shown us, very little difficulty in extracting a few typical examples of the results given by any formula, however complicated, and ascertaining whether such results agree or disagree with our everyday experience. There is no need to be frightened by mathematical symbols, which all have simple physical meanings, nor to become entangled in algebraical deductions: the result is the thing, and architects can judge that as well as anybody.

What Dr. Faber has done in applying the *results* of Rankine's formulæ to physical happenings in practical work architects can do with every formula, old and new, which they are advised to adopt. They may not be able to evolve new and better rules and formulæ; and it is to be hoped they will not try to. We are bound by too many rules and formulæ already. Far too many worthy enthusiasts are urging us to adopt their particular form of structural salvation.

The extent to which the developments of modern science enable the engineer to produce formulæ of certain and unquestionable reliability is much over-rated. Do we not see Dr. Faber asking us to substitute his formulæ for Rankine's, and complaining of the ten different rules for piles? Pile formulæ did not trouble the builders of the oak frame houses which remain to our delight after, not 20 or 100 years, but after many centuries.

Subsequent speakers also did not, as engineers, seem to be wholly in agreement with Dr. Faber. Their attacks were, of course, disarmed by well-earned eulogy, but still they attacked when necessary. All this is to the good. Originality of thought is always welcome. *Quot homines, tot sententiae.* But when the doctors disagree there is only the architect to stand between the patient client and disaster.

Undisturbed and unimpressed by the clashing of rival mathematical symbols, he alone must make his structural decisions, for which his client and posterity will hold *him* responsible, and not the expert whom he has engaged.

Let the architectural schools see to it that the coming generation of young architects are turned out with a proper grounding in structural common sense, with that first-hand knowledge of materials and forces which can only be learned from practical tests—from models

of roof trusses loaded to destruction, from the breaking of beams and not merely sticks, from test holes dug and tested with the students' own hands.

Let that spirit be engendered which in my own experience caused an elderly district surveyor to spend two evenings a week at the Westminster Technical Institute during a whole winter, mixing and shovelling concrete into the forms of reinforced concrete test beams and pillars, and subsequently watching the test results with all the keenness of the young students around him. No serious outlay is involved. My students at Westminster made all their own test plant—powerful enough to break a floor panel, yet sufficiently delicate to read deflections to a fraction of a millimetre. An hour on the testing machine is worth a week of algebra.

When Westminster Hall roof was built there was no Integral Calculus, no algebra, and certainly no stress diagrams or slide rules. If there had been, probably no one would have dared to build it. Possibly also there were no tee squares or french curves. Only models. *Verb. sap.*

Obituary

SIR RYLAND ADKINS, K.C., D.L.

The range of Ryland Adkins's interests seemed to have no limit. He could at a moment's notice speak with ease upon almost any subject; and if what he said about matters which he had not closely studied was not profound, it was at least stimulating and interesting. He was one of the best after-dinner speakers of his time, always ready with some apt phrase, some humourous anecdote, or some flash of wit. One of his charms was that his wit was original, produced by the circumstances of the moment. To talk with him was always a stimulant; like Falstaff, he was not only witty in himself, but the cause of wit in others.

Among the many subjects of which he made a study was architecture, more especially in its domestic manifestations. He knew many large houses and their gardens, and being full of historical learning, nothing delighted him more than to fit these places into history, to relate them to the men and manners of their period. He was profoundly versed in the history of his native county of Northamptonshire, and the growth and development of its civilisation. He had sound theories of why roads ran this way or that, why villages stood where they did, why the churches were built in their particular positions, and why the manor houses were near the churches or at some distance from them. With the details of architecture he was less concerned, but sought information with ingenuous simplicity.

His interests were so widespread that the number attending his funeral was unprecedented in the county. Representatives of every phase of county government and of politics, art and literature, from all over the country were present. Of most of the high offices he held it may be said that no adequate successor will be found. To him, more than to most, are applicable the well-known words "Take him for all in all, we shall not look upon his like again."

J. A. G.

ST. PAUL'S CATHEDRAL.

In response to an invitation from the Dean of St. Paul's, the Council of the Royal Institute of British Architects have nominated Mr. William Dunn, F.R.I.B.A., late Consulting Engineer in Reinforced Concrete to H.M. Office of Works, to represent the Royal Institute upon the Committee now being formed by the Dean and Chapter of St. Paul's in connection with the administration of the funds recently subscribed by the public for the preservation of the Cathedral.

Mr. Dunn was in Italy on his way to East Africa, but has consented by telegram to return to London immediately for the sole purpose of serving on the above Committee—a public-spirited action which will be appreciated by all who are aware of the exceptional qualifications which Mr. Dunn possesses for this appointment.

THE NATIONAL PHYSICAL LABORATORY.

The Superintendent of the National Physical Laboratory writes to say that a considerable number of applications have been received at the Laboratory from architects engaged on hospitals for copies of the X-ray and Radium Protection Committee's Report which deals, among other things, with the protection arrangements necessary for X-ray departments. Copies of these recommendations can be had free of charge on application to the Director of the National Physical Laboratory, Teddington, Middlesex.

THE TRIPLE SCREEN AT HYDE PARK CORNER.

8, *Montague Road,*
Richmond Hill, Surrey.
29 *January* 1925.

To the Editor, JOURNAL R.I.B.A.

DEAR SIR,—An article on the work of John Henning and his sons appeared in *The Art Journal* for April 1849. In it is contained the answer to Mr. Cyril Brett's question.* After referring to some work carried out by the sculptor, assisted by his sons, it continues "Other works in relief were executed by the same united hands, among which we may mention the friezes on Hyde Park gate, of which John Henning, junr. furnished the designs." The article is unsigned, but states that it is founded on a MS. autobiography, and having been published so soon after the execution of the work and during the lifetime of John Henning, senr., may, I think, be considered a trustworthy authority for the ascription of the design to his son John, and of the actual carving to the father and both sons; the joint execution may account for the conflicting statements referred to in Mr. Brett's letter.—Yours faithfully, J. STANDEN ADKINS.

* See JOURNAL, 10 January, p. 159.

Legal

HIGH COURT OF JUSTICE.

CHANCERY DIVISION.

THE USE OF THE LETTERS A.R.I.B.A.

ROYAL INSTITUTE OF BRITISH ARCHITECTS *v.* HINDLE.

(*Before* MR. JUSTICE TOMLIN.)

This motion was brought by the Royal Institute of British Architects for an interim injunction to restrain the defendant, J. W. Hindle, from using the description or letters A.R.I.B.A., or from otherwise representing that he was connected with or vouched for by the plaintiff Institute.

Mr. F. Whinney appeared for the plaintiff Institute; the defendant did not appear.

Mr. Whinney said that in this case the defendant had been representing that he had passed the examination of Associate of the Royal Institute of British Architects, and had added the letters A.R.I.B.A. after his name.

By so doing he had obtained a contract of employment by Mr. Halstead Best, at a salary of six guineas a week for five years, who had taken him into his employment in the belief that he was a member of the plaintiff Institute. Owing to the manner in which he did his work, the employer became doubtful whether he could be a member of the Institute, and ultimately he discovered that he was not. It was not the first time that the defendant had attempted to pass himself off as an Associate, and, in the circumstances, the Institute asked for an injunction.

Mr. Justice Tomlin granted the injunction.

Solicitors: Messrs. Markby, Stewart, and Wadesons.

ARCHITECTS' BENEVOLENT SOCIETY.

SCHEME OF INSURANCE.

In view of the interest shown by architects in the Scheme of Insurance, the Council of the Architects' Benevolent Society have recently secured the help of an advisory committee of insurance specialists.

The Architects' Benevolent Society is now in a position to answer enquiries on every class of insurance business, whether concerning existing or contemplated policies, and is ready to give considered advice on all such questions.

THE ART LOVERS' LEAGUE.

A new association has been started under this title with the objects of uniting "artists and the public in the support of a sane, healthy and progressive art and to discourage the interested exploitation of degenerate, reactionary and incompetent work." In a preliminary prospectus, issued by the League, it is stated that "owing to the organised propaganda of extremists, successfully promulgated through the absence of systematic opposition, sound and well understood standards of criticism have been largely abrogated in favour of arbitrary and illogical dogmas." The League proposes by various means to combat this state of affairs in all directions in which its influence operates adversely against the interests of sane and competent work.

NOTES FROM THE MINUTES OF THE COUNCIL MEETING.

19 *January* 1925.

OFFICIALS AND PUBLIC WORK.

On the recommendation of the Practice Standing Committee, it was decided to bring forward a resolution at a General Meeting to the effect that all public buildings paid for out of the rates or other public funds should be technically and architecturally worthy of the locality. To achieve this end the design of such buildings should be either the subject of competition or entrusted to a qualified architect without competition; further, that if such resolution is approved by the General Body of Members, it should be forwarded to the appropriate authorities.

HOUSING COMPETITIONS: MODEL CONDITIONS.

The Council approved an amendment to Clause 4 of these Conditions so as to provide for the remuneration of the successful competitor being in accordance with the proposed Scale of Fees for Housing Work.

ZONING OF BUILT-UP AREAS.

The Council approved a report on the subject of the Zoning of Built-up Areas drawn up by the Town Planning Committee and ordered it to be submitted to the London County Council in response to a request from that body for the views of the R.I.B.A. on the subject.

REFORM OF THE LONDON BUILDING ACTS.

On the recommendation of the London Building Acts Committee, it was decided to submit the Committee's report on the Reform of the London Building Acts to the London County Council.

ALBERT BRIDGE, OLD WINDSOR.

On the recommendation of the Art Standing Committee, it was decided to enquire from the Ministry of Transport whether this design had been brought to their notice, and to suggest that, in view of the expenditure of public money involved, the Minister of Transport should urge the Local Authority concerned to seek the advice of the Royal Fine Art Commission.

REPORT OF THE SPECIAL COMMITTEE ON HOUSING FEES.

The draft of the revised Scale of Fees for Housing Work was approved and ordered to be submitted to the General Body at an early date.

THE ALLIED SOCIETIES.

(A) Sanction was given to an alteration in the constitution of the Manchester Society of Architects to enable the Burnley Society of Architects to be admitted to alliance with the Manchester Society.

(B) An alteration of the boundaries of the Liverpool Architectural Society and the Birmingham Architectural Association was sanctioned to enable a Branch of the Liverpool Architectural Society to be formed at Chester.

PRIZES AND STUDENTSHIPS.

The Award of Prizes and Studentships for 1925 was approved and sealed.

ST. PAUL'S CATHEDRAL.

A donation of 100 guineas was voted in aid of the St. Paul's Cathedral Preservation Fund.

Model Specification of Water Pipes and Fittings.

On the recommendation of the Science Standing Committee, the Model Specification of Water Pipes and Fittings prepared by a Committee appointed by the Minister of Health was approved, and the following additional paragraph was suggested for the consideration of the Minister of Health :—

V. "Every overflow should be easily accessible for cleaning purposes."

The University of Bristol.

Mr. Mowbray A. Green was appointed as a member of the Court of the University of Bristol.

The National Association of Water-Users.

Mr. P. M. Fraser and Mr. Alan E. Munby were appointed as representatives of the R.I.B.A. upon the Council of the National Association of Water-Users.

The National Register of Electrical Installation Contractors.

Mr. Max Clarke and Mr. Alan E. Munby were reappointed as the representatives of the R.I.B.A. upon the Registration Board of the National Register of Electrical Installation Contractors.

British Engineering Standards Association.

Mr. C. A. Daubney and Mr. P. M. Fraser were appointed to represent the R.I.B.A. at a Conference to be held at the Institution of Civil Engineers, Great George Street, Westminster, S.W.1, on Wednesday, 28 January.

Reinstatement.

Mr. H. W. Mole and Mr. Percy J. Groom were reinstated as Associates.

Resignation.

The resignation of Mr. G. F. Byron (*Licentiate*) was accepted with regret.

BOARD OF ARCHITECTURAL EDUCATION.

Exhibition of Architects' Working Drawings.

An Exhibition of Architects' Working Drawings will be held in the R.I.B.A. Galleries from Wednesday, 18 February 1925, to Saturday, 7 March 1925.

The Exhibition will be open daily between the hours of 10 a.m. and 8 p.m. (Saturdays 5 p.m.), and will include drawings kindly lent by :—Sir Edwin L. Lutyens, R.A. [*F.*], (Britannic House); Sir John J. Burnet, A.R.A., R.S.A. [*F.*], (Adelaide House); Messrs. Helmle and Corbett (Bush House) and Mr. H. S. Goodhart-Rendel [*F.*].

The Exhibition is intended primarily for students of architecture; they will be able to examine the drawings that a practising architect hands to a contractor, and thus will be afforded an insight into the methods adopted in a modern architect's office.

A Special Students' Evening will be held at the Exhibition on Wednesday, 18 February 1925, at 8 p.m. All students are cordially invited to attend. It is hoped that the architects who have lent the exhibits—or their representatives—will be present in order to explain the drawings to students. Refreshments will be provided, and no cards of admission are required.

R.I.B.A. EXAMINATIONS.

The following are the dates for the R.I.B.A. examinations in 1925 :—

Intermediate Examination.—22, 23, 25, 26 and 28 May. (Last day for receiving applications, 24 April.) 20, 21, 23, 24 and 26 November. (Last day for receiving applications, 17 October.)

Final and Special Examinations.—8, 9, 10, 11, 13, 14 and 16 July. (Last day for receiving applications, 8 May.) 2, 3, 4, 5, 7, 8, and 10 December. (Last day for receiving applications, 30 October.)

Examination for the R.I.B.A. Diploma in Town Planning—1, 2, 3, and 6 July. (Last day for receiving applications, 1 March.)

Notices

SPECIAL GENERAL MEETING.

A special general meeting will be held on Monday, 16 February 1925, at 8 p.m. for the following purposes :—

1. To read the minutes of the special general meeting held on 7 July 1924, and formally to admit members attending for the first time since their election.

2. To consider, and, if thought fit, approve the following resolution, which is submitted to the general body of members by the Council on the recommendation of the Practice Standing Committee :—

"That all public buildings paid for out of the rates or other public funds should be technically and architecturally worthy of the locality. To achieve this end, the design of such buildings should either be the subject of competition or entrusted to a qualified architect; and further, that this resolution, if approved, be forwarded to the appropriate authorities."

3. To consider, and, if thought fit, approve a scale of architects' charges for housing work prepared by a special committee, and approved by the Council with a view to the incorporation of such scale in the R.I.B.A. scale of professional charges in the place of the existing Clause 9; and in connection therewith, to consider, and, if thought fit, approve the following resolution :—

"With the object of assisting in the solution of the national housing problem, and having in view the necessity for the employment of qualified architects on housing work, the members of the Royal Institute of British Architects assembled in general meeting, resolve to modify their charges in connection with housing schemes for local authorities and public utility societies, and agree to accept a reduced scale of charges for such work.

And further, that this resolution, if approved, be transmitted to the Ministry of Health and local authorities together with a copy of the scale."

A copy of the draft scale of architects' charges for housing work is enclosed with this issue of the Journal.

4. The Council will propose that the new Bye-Law 29 be amended by the addition of the following words :—

"(*g*) The Chairman of the Board of Architectural Education, being a Fellow of the Royal Institute," at the end of paragraph (*f*) in the new Bye-Law.

VISIT TO THE SIR JOHN SOANE MUSEUM.

A visit has been arranged by the Art Standing Committee to take place on Saturday, 28 February, to the Sir John Soane Museum. As the number attending must be limited, members desirous of taking part are requested to make early application to the Secretary R.I.B.A., 9, Conduit Street, London, W.1.

ELECTION OF MEMBERS, 8 JUNE 1925.

Associates who are eligible and desirous of transferring to the Fellowship Class, are reminded that if they wish to take advantage of the election to take place on 8 June 1925, they should send the necessary nomination forms to the Secretary R.I.B.A. not later than Saturday, 21 March.

BUSINESS MEETING, 2 MARCH 1925

An election of members will take place at the Business General Meeting on 2 March 1925. The names and addresses of the candidates (with the names of their proposers) found by the Council to be eligible and qualified for membership according to the Charter and Bye-laws, and recommended by them for election, are as follows :—

AS FELLOWS (6).

BARKER : RAYMOND TURNER [*A.* 1899], 11 Buckingham Street, Strand, W.C. ; New Place, Welwyn, Herts. Proposed by Wykeham Chancellor, Sydney W. Cranfield, T. F. W. Grant.

BESWICK : WILLIAM [*A.* 1911], 19 Newgate Street, Chester ; 17 Eaton Road, Chester. Proposed by Maxwell Ayrton, Sir John W. Simpson, William J. Walford.

DANNATT : PERCY BOOTHROYD, F.S.I. [*A.* 1903], 18 Nelson Street, Greenwich, S.E.10 ; 47 Westcombe Park Road, Blackheath, S.E.3. Proposed by Alfred Roberts, W. R. Davidge, W. H. Ansell.

PARKIN : WILLIAM GORDON [*A.* 1918], Consular Road, Tientsin, China ; 125, Meadows Road, Tientsin, China. Proposed by Herbert Baker and the Council.

SLATER : JOHN ALAN, M.A.Cantab. [*A.* 1911], 46 Berners Street, W.1 ; 8 Wellgarth Road, N.W.11. Proposed by A. H. Moberly, Maurice E. Webb, F. C. Eden.

WILSON : JOHN GODDARD [*A.* 1923], Public Works Department, Union Buildings, Pretoria, South Africa. Proposed by Ernest M. Powers, J. Lockwood Hall, Sir Aston Webb.

AS ASSOCIATES (15).

BARNSLEY : GEOFFREY REYNOLDS [*Final Examination*], 3 Paper Buildings, Temple, E.C.4. Proposed by A. Dunbar Smith, Sir John W. Simpson, Maxwell Ayrton.

BEST : MAJOR HALSTEAD, R.E. (ret.), F.S.I. [*Special Examination*], St. John's Chambers, Church Street, Blackpool Proposed by Arthur Ashton and the Council.

CUMMINGS : CLIFFORD LANE [*Special War Examination*], St. Leonard's Avenue, St. Kilda, Melbourne, Australia. Proposed by the Council.

ELIJAH : SAMSON ABRAHAM [*Final Examination*], c/o Messrs. Thos. Cook & Son, Hornby Road, Bombay, India. Proposed by Charles E. Varndell, Geoffry Lucas, Robert Atkinson.

ENTHOVEN : RODERICK EUSTACE [*Passed five years' course at Architectural Association—Exempted from Final Examination after passing Examination in Professional Practice*], 3 Cleveland Gardens, Lancaster Gate, W.2. Proposed by H. S. Goodhart-Rendel, Robert Atkinson, F.A. Richards.

FAIRHURST : PHILIP GARLAND [*Passed five years' course at Manchester University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice*], Ellesmere, Macclesfield Road, Wilmslow, Cheshire. Proposed by Dr. Percy S. Worthington, J. W. Beaumont, A. W. Hennings.

HINES : EDWARD GEORGE [*Final Examination*], Stockwood Crescent, Luton, Beds. Proposed by Professor A. E. Richardson, Arthur Stratton, E. Guy Dawber.

LANGCAKE : WILFRED [*Special Examination*], 109 Grove Lane, Denmark Hill, S.E.5. Proposed by Alfred Cox, Sir John W. Simpson, Maxwell Ayrton.

MASON : HILDA FRANCES [*Final Examination*], Northcliffe, Felixstowe. Proposed by Charles E. Varndell, Ernest S. Gale, Robert Atkinson.

MILLER : JOSEPH HAYDN, B.Arch.Liverpool [*Passed five years' course at Liverpool University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice*], 604 Rose Hill, Pemberton, Wigan. Proposed by Professor C. H. Reilly, Robert M. Young, N. Fitzsimons.

MILLS : JOHN CHECKLEY ROBINSON [*Special War Examination*], 38 Martin Place, Sydney, N.S.W. Proposed by Col. Alfred Spain, Major-General Sir Charles Rosenthal, Professor Leslie Wilkinson.

PAKINGTON : HONBLE. HUMPHREY ARTHUR [*Passed five years' course at Architectural Association—Exempted from Final Examination after passing Examination in Professional Practice*], 9 Arundel Gardens, W.11. Proposed by Robert Atkinson, Maurice E. Webb, Stanley Hamp.

PHILLIPS : LIONEL BLYTHEWOOD [*Special War Examination*], 6 Wyatt Avenue, Burwood, Sydney, N.S.W. Proposed by Professor Leslie Wilkinson, Col. Alfred Spain, Major-General Sir Charles Rosenthal.

STEELE : HAROLD ROOKSBY [*Final Examination*], 87 Victoria Street, Westminster, S.W.1 Proposed by F. W. Troup, Henry M. Fletcher, T. F. W. Grant.

TOWNSEND : JOYCE ELEANOR [*Passed five years' course at Architectural Association—Exempted from Final Examination after passing Examination in Professional Practice*], 9 Gray's Inn Square, Gray's Inn, W.C.1. Proposed by Robert Atkinson, Gilbert H. Jenkins, C. Lovett Gill.

AS HON. ASSOCIATE (1).

STEGGALL : JOHN EDWARD ALOYSIUS, M.A.Cantab, F.R.S.E., Professor of Mathematics in the University of St. Andrews, at University College, Dundee ; Woodend, Perth Road, Dundee. Proposed by the Council.

Competitions

ROYAL SOCIETY OF ARTS.

Memorial Library for a College Competition.

In order to encourage the study of designs for industrial purposes the second series of open competitions organised by the Royal Society of Arts will include a competition for a Memorial Library for a College suitable for housing a small but rare collection of books.

The conditions are as follows :

A Travelling Scholarship of the value of £150 for one year will be offered on the following conditions :

Candidates must not be over 35 years of age. They must be prepared to travel in France, Italy, Spain or Flanders for six months, which, however, may be broken up into periods of, say, three or two consecutive months.

Subject of Competition.

The subject is a Memorial Library for a College, suitable for housing a small but rare collection of books.

The superficial area of the room is not to exceed 1,500 feet. The method of arranging the bookcases and displaying a few *objets d'art* is left to the competitor. Cost is not a primary consideration, and the use of expensive woods, as well as inlays of ivory, ebony or metal, in addition to marble, can be considered.

In a suitable place a commemorative panel or some other *motif* should remind the visitor of the origin of the Library. The scheme of the ceiling, which can be treated as a space for decorative painting, as well as the pattern of the floor, must harmonise with the whole design.

A preliminary competition of twelve hours will be held in London and other centres in April 1925. Candidates must give notice of their intention to compete to the Secretary of the Royal Society of Arts, not later than 14 March. For this competition the following drawings will be necessary :

A plan of the floor, one section, and a plan of the ceiling, all to the scale of a quarter of an inch to a foot.

For the final competition two months will be allowed to the competitors, selected after the first competition. The finished drawings are to include the following :

Plans of floor and ceiling and two sections to a scale of half an inch to a foot, a detail drawing of the fireplace or some other feature, showing the complete height and treatment of the room from floor to ceiling.

Competitors should bear in mind that electric lighting and central heating are to be considered.

The competition will take place in June 1925.

LEAGUE OF NATIONS.

Competition for the Selection of a Plan with a View to the Construction of a Conference Hall for the League of Nations at Geneva.

The League of Nations will shortly hold a competition for the selection of a plan with a view to the construction of a Conference Hall at Geneva. The competition will be open to architects who are nationals of States Members of the League of Nations.

An International Jury consisting of well-known architects will examine the plans submitted and decide their order of merit.

A sum of 100,000 Swiss francs will be placed at the disposal of the Jury to be divided among the architects submitting the best plans.

A programme of the competition will be ready in February, 1925, and will be despatched from Geneva so that Governments and competitors may receive copies at approximately the same date. Copies for distant countries will therefore be despatched first.

The British Government will receive a certain number of free copies. These will be deposited at the Royal Institute of British Architects, and application should be made to the Secretary, R.I.B.A., 9, Conduit Street, W.1, by intending competitors.

Single copies can be procured direct from The Secretary-General of the League of Nations at Geneva, for the sum of 20 Swiss francs, payable in advance, but will not be forwarded until after the Government copies have been despatched.

On the nomination of the President of the Royal Institute, Sir John Burnet, A.R.A., has been appointed as the British representative on the Jury of assessors.

UGANDA RAILWAY NEW OFFICE, NAIROBI.

Apply to the Crown Agents for the Colonies, 4 Millbank, Westminster, S.W.1. Closing date for receiving designs, 28 February 1925. Assessor : Mr. William Dunn, F.R.I.B.A. Deposit £1 1s. Telegram received :—

" Reference New Railway Offices. Many requests received from competitors for extension of competition. Agree to one month extension. Please advertise this. Lists of questions and answers being sent by first mail for distribution."

THE NEW INSTITUTE FOR THE BLIND, BUENOS AIRES, ARGENTINE REPUBLIC.

An International Competition has been promoted for the Argentine Institution for the Blind, Buenos Aires, Argentine Republic.

A small number of copies of the Conditions have been deposited in the R.I.B.A. Library for the information of British Architects who may desire to compete.

MASONIC MEMORIAL COMPETITION.

Apply to The Grand Secretary, Freemasons' Hall, Great Queen Street, W.C.2. Last day for applying for conditions, 23 August 1924. Deposit, £1 1s. Closing date for receiving designs, 1 May 1925. Assessors : Sir Edwin Lutyens, R.A. [*F.*] (appointed by the President); Mr. Walter Cave [*F.*], Mr. A. Burnett Brown, F.S.I.

MANCHESTER ART GALLERY.

Apply to the Town Clerk, Town Hall, Manchester. Closing date for receiving designs, 28 February 1925. Assessors : Professor C. H. Reilly, O.B.E. [*F.*], Mr. Percy S. Worthington, Litt.D., F.S.A. [*F.*].

BETHUNE MEMORIAL TO THE MISSING.

The Imperial War Graves Commission desire Members and Licentiates of the Royal Institute to be reminded that applications to take part in the above Competition from persons other than those who had signified their intention of competing on or before 1 January 1924 cannot be considered. Due notice of this regulation was published in the Professional Press on various occasions during August and September, 1923.

RUGBY U.D. COUNCIL HOUSING SCHEME.

Members and Licentiates of the Royal Institute of British Architects must not take part in the above competition, because the conditions are not in accordance with the published regulations of the Royal Institute for architectural competitions.

BRANCH PUBLIC LIBRARY, HAREHILLS, LEEDS.

Assessor, Mr. Percy S. Worthington, M.A., Litt.D., F.R.I.B.A. Last day, 16 February 1925. Apply to:—Thos. Thornton, Town Hall, Leeds.

EXTENSIONS TO LEEDS UNIVERSITY.

The President of the Royal Institute of British Architects has nominated Dr. Percy S. Worthington, F.R.I.B.A., as Assessor in this Limited Competition.

Members' Column

MESSRS. FREDK. W. SKIPPER & SON.

MR. F. W. SKIPPER has taken into partnership in his practice of architect and surveyor, his son, Mr. Eric H. Skipper, A.R.I.B.A. who has had considerable experience in London and the North of England. The style of the firm will be Messrs. Fredk. W. Skipper & Son, and the practice will be continued at 55 London Street, Norwich.

PARTNERSHIP WANTED.

ARCHITECT AND SURVEYOR, A.R.I.B.A. (33) wishes to get into touch with established architect with view to partnership. Eastern Counties preferred.—Reply Box 3115, c/o Secretary R.I.B.A., 9 Conduit Street, W.

PARTNERSHIP.

F.R.I.B.A., only surviving member of an old-established Westminster firm of architects and surveyors, is desirous of retiring from the practice, and is prepared to hear from a qualified energetic man with capital, with a view to the purchase of the goodwill and reversion, with a present share of the practice.—Reply Box 4225, c/o Secretary R.I.B.A., 9 Conduit Street, London, W.

A GENTLEMAN prepared to engage in intense activity and intent on recovering practice lost during the war would like to join another in some way, having a like practice. A small interest only is now required, for which a capital sum would be paid. To obviate fear of embarrassment, inquiry or preliminary negotiation might be through the Secretary.—Box 2715, c o Secretary R.I.B.A., 9 Conduit Street, London, W.

DISSOLUTION OF PARTNERSHIP.

MR. BRIANT POULTER [*A.*], has dissolved partnership with Mr. P. Morley Horder, and has opened new offices at 27 Buckingham Gate, S.W.1.

Minutes VII

SESSION 1924–1925.

At the Seventh General Meeting (Ordinary) of the Session 1924–1925, held on Monday, 2 February 1925, at 8.30 p.m., Mr. J. Alfred Gotch, F.S.A., President, in the Chair:

The attendance book was signed by 34 Fellows (including 14 members of the Council), 28 Associates (including 5 Members of the Council), 3 Licentiates, and a very large number of visitors.

The Minutes of the Meeting held on 19 January 1925, having been published in the JOURNAL, were taken as read and signed as correct.

The Hon. Secretary announced the decease of:

Mr. Robert Lockhart McCowat, of South Africa, Elected Fellow 1898.
Mr. Samuel Osborne Blythe, Elected Licentiate 1910.
Mr. Sidney Hall Goodwin, Elected Licentiate 1912.
Mr. Rowland Brockman Moffat, Elected Licentiate 1911.

And it was *Resolved* that the regrets of the Institute for their loss be entered on the Minutes, and that a message of sympathy and condolence be conveyed to their relatives.

The following members, attending for the first time since their election, were formally admitted by the Chairman:

Mr. Arthur H. Church [*F.*].
Mr. Robert Lowry [*F.*].
Mr. Harold S. Rogers [*F.*].
Mr. T. Aikman Swan [*A.*].

The Secretary announced that the Council had nominated for election to the various classes of Membership the candidates whose names were published in the JOURNAL for 10 January 1925.

The President announced that the Council proposed to submit to His Majesty the King the name of Sir Giles Gilbert Scott, R.A., as a fit recipient of the Royal Gold Medal for the current year.

The President, having delivered the Annual Address to Students, a vote of thanks was passed to him by acclamation, on the motion of Mr. J. C. Squire [*Hon. Associate*], President of the Architecture Club, seconded by Dr. Albert C. Seward, Vice-Chancellor of the University of Cambridge.

Mr. Maurice E. Webb [*F.*] read a review on the works submitted for the Prizes and Studentships, 1925.

The President, having responded to the vote of thanks to himself, moved a vote of thanks to Mr. Webb, which was passed by acclamation.

The Presentation of Prizes was then made as follows, in accordance with the Award:

The R.I.B.A. Essay Silver Medal and a cheque for £50 to Mr. Frank Pentland Chambers, B.A. (Cantab). A Certificate of Honourable Mention to Mr. Martin S. Briggs [*F.*].

The R.I.B.A. Measured Drawings Silver Medal and a cheque for £50 to Mr. Richard W. Briggs, B.A. [*A.*]. A Certificate of Honourable Mention to Mr. Jack Antonio Coia [*A.*].

The Tite Prize: Certificate and £100. The Tite Certificate to Mr. D. H. Beaty-Pownall. Certificates of Honourable Mention to Mr. John F. D. Scarborough and Miss Alison Sleigh.

The Pugin Studentship: A Silver Medal and £75. The Pugin Silver Medal to Mr. Donald Hanks McMorran. A certificate of Honourable Mention and a cheque for £10 to Mr. Edwin H. H. Williams.

The Owen Jones Studentship: Certificate and £100. The Owen Jones Certificate to Miss Leonora F. M. Payne.

The Godwin Bursary and Wimperis Bequest: A Silver Medal and £130. The Godwin Silver Medal to Mr. Leonard Holcombe Bucknell [*A.*].

The R.I.B.A. (Alfred Bossom) Studentship: a Gold Medal and £250. The Gold Medal and a Silver Medal to Mr. Frank Edgar Bennett [*A.*]. Silver Medals to Mr. Frank Henry Heaven [*A.*] and Mr. Charles Thomas Bloodworth.

The Grissell Gold Medal and a cheque for £50 to Mr. Arthur Edwin Cameron.

The Ashpitel Prize: Books to the Value of £10 to Mr. Geoffrey Reynolds Barnsley.

The R.I.B.A. Silver Medal for Post-Graduate Students of Recognised Schools to Miss Elsie Rogers, of the Manchester University School of Architecture.

The proceedings closed at 10.5 p.m.

Subscription to the R.I.B.A. JOURNAL by *non-members* of the Institute is £1 11s. 6d. post free.

Arrangements have been made for the supply of the R.I.B.A. JOURNAL (post free) to members of the Allied Societies who are not members of the R.I.B.A. at a specially reduced subscription of 12s. a year. Those who wish to take advantage of this arrangement are requested to send their names to the Secretary of the R.I.B.A., 9 Conduit Street, W.1.

R.I.B.A. JOURNAL.

Dates of Publication.—1924: 8th, 22nd November; 6th, 20th December. 1925: 10th, 24th January; 7th, 21st February; 7th, 21st March; 4th, 25th April; 9th, 23rd May; 13th, 27th June; 18th July; 15th August; 19th September; 17th October.